

Draft Environmental Impact Report

SCH# 2019060259

Volume 1
Chapters 1 through 10

SANBORN SOLAR PROJECT
by Sanborn Solar, LLC (*PP19102*)

Zone Change Case No. 56, Map No. 196
Zone Change Case No. 2, Map No. 212
Zone Change Case No. 59, Map No. 213
Conditional Use Permit No. 45, Map No. 196
Conditional Use Permit No. 5, Map No. 212
Conditional Use Permit No. 66, Map No. 213
Mojave Specific Plan Amendment No. 30, Map 196



Kern County
Planning and Natural Resources Department
Bakersfield, California

February 2020

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

Planning
Community Development
Administrative Operations

February 14, 2020

File: ZCC No. 56, Map No. 196; ZCC No. 2, Map 212; ZCC No. 59, Map No. 213, CUP No. 45, Map 196; CUP No. 5, Map No. 212; CUP No. 66, Map No. 213; and SPA 30, Map 196

ADDRESSEE LIST (See Distribution List)

Re: Draft Environmental Impact Report for the Sanborn Solar Project by Sanborn Solar, LLC (SCH #2019060259)

Dear Interested Party:

Kern County has prepared a Draft Environmental Impact Report (Draft EIR) for the above-noted land use applications to allow for the construction and operation of a solar photovoltaic power generating facility and associated facilities that would generate a combined total of approximately 300 megawatts (MW) of renewable electrical energy and up to 3GWh of energy storage capacity on approximately 2,006 acres of privately-owned land in unincorporated Kern County.

The project site is located approximately 14 miles southeast of the City of Tehachapi, approximately 1.5 miles southeast of the unincorporated community of Mojave, and approximately 7.5 miles southeast of the unincorporated community of Rosamond. The project site is bounded by SR 58 and the Mojave Air and Space Port to the north, open space to the east and the west, and Edwards Air Force Base to the south, adjacent to the southernmost portion of the project site. The site is located in Sections 22, 23, 26, 27, 35, Township 11 North, Range 12 West (SBB&M), Section 1, Township 10 North, Range 12 West (SBB&M), and Section 7, Township 10 North, Range 11 West (SBB&M), County of Kern, State of California.

The project proponents are requesting: **(a)** Three (3) Zone Change Cases (ZCC) from the existing Zone District A-1 (Limited Agriculture) to A (Exclusive Agriculture) and from the existing Zone District A-1 H (Limited Agriculture - Airport Approach Height Combining) to A H (Exclusive Agriculture - Airport Approach Height Combining) for approximately 461 acres (ZCC No. 56, Map No. 196); from the existing Zone District A-1 to A for approximately 645 acres (ZCC No. 2, Map No. 212); and from the existing Zone District A-1 to A and from A-1 FPS (Limited Agriculture - Flood Plain Secondary Combining) to A FPS (Exclusive Agriculture - Flood Plain Secondary Combining) for approximately 320 acres (ZCC No. 59, Map No. 213); **(b)** Three (3) Conditional Use Permits (CUP), to allow for the construction and operation of a 300 MW solar photovoltaic electrical generating facility with up to 3GWh of energy storage (Section 19.12.030.G) in an A District (CUP No. 45, Map No. 196; CUP No. 5, Map No. 212; and CUP No. 66, Map No. 213); and **(c)** Amendment to the Mojave Specific Plan to remove a portion of the designated, but not constructed, arterial roadway of Purdy Avenue from United Street to Fifth Street (Specific Plan Amendment No. 30, Map 196). The project's permanent facilities would include service roads, overhead and underground transmission lines, a step-up conversion station, project substations, energy storage facilities, telecommunication equipment, perimeter security fencing, operations and maintenance facilities, and gen-tie lines.

The Kern County Planning and Natural Resources Department, as Lead Agency, has determined that preparation of an Environmental Impact Report would be appropriate for the referenced project. Enclosed is a copy of the Draft EIR.

If we have not received a reply from you by **March 30, 2020, at 5:00 P.M.**, we will assume that you have no comments regarding this Draft EIR.

Should you have any questions regarding this project, please do not hesitate to contact me at (661) 862-8997 or via email at CandiaR@kerncounty.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ronelle Candia".

Ronelle Candia, Supervising Planner
Advanced Planning Division

SPA #30; ZC #56; CUP #45, Map #196
(EIR 02-18 - Sanborn Solar, LLC)
WO #PP19102
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Sc 02/04/20

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

Bakersfield City Planning Dept
1715 Chester Avenue
Bakersfield, CA 93301

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

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

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

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

City of McFarland
401 West Kern Avenue
McFarland, CA 93250

City of Ridgecrest
100 West California Avenue
Ridgecrest, CA 93555

City of Shafter
336 Pacific Avenue
Shafter, CA 93263

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

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

City of Wasco
764 E Street
Wasco, CA 93280

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

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

Los Angeles Co Reg Planning Dept
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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
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San Luis Obispo, CA 93408

Santa Barbara Co Resource Mgt Dept
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Santa Barbara, CA 93101

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

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

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

China Lake Naval Weapons Center
Tim Fox, RLA - Comm Plans & Liaison
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Mail Stop 4001
China Lake, CA 93555

Edwards AFB, Sustainability Office
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195 East Popson Avenue
Edwards AFB, CA 93524

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

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

U.S. Fish & Wildlife Service
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Palm Springs, CA 92262

Eastern Kern Resource Cons Dist
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Ridgecrest, CA 93555-4436

Environmental Protection Agency
Region IX Office
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San Francisco, CA 94105

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

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
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Bakersfield, CA 93311

Caltrans/Dist 6
Planning/Land Bank Bldg.
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Fresno, CA 93778

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Planning Department
500 South Main Street
Bishop, CA 93514

Caltrans/
Division of Aeronautics, MS #40
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Sacramento, CA 94273-0001

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
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State Dept of Conservation
Division of Oil & Gas
4800 Stockdale Highway, Ste 108
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State Dept of Conservation
Office of Land Conservation
801 "K" Street, MS 18-01
Sacramento, CA 95814

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

California Fish & Wildlife
1234 East Shaw Avenue
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Planning & Analysis Division
P.O. Box 942898
Sacramento, CA 94298-0001

State Office of Historical Pres
Attention Susan Stratton
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Sacramento, CA 95296-0001

State Water Resources Control Board
Division of Drinking Water
Attn: Jesse Dhaliwal, Sr. Sanitary Eng
4925 Commerce Drive, Suite 120
Bakersfield, CA 93309

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

CalRecycle
Dept of Resources, Recycling, and
Recovery
1001 "I" Street
Sacramento, CA 95812

Kern County
Agriculture Department

Kern County Airports Department

Kern County Administrative Officer

Kern County Public Works Department/
Building & Development/Floodplain

Kern County Public Works Department/
Building & Development/Survey

Kern County
Env Health Services Department

Kern County Fire Dept
David Witt, Interim Fire Chief

Kern County Fire Dept
Cary Wright, Fire Marshall

Kern County Library/Beale
Local History Room

Kern County Library/Beale
Andie Sullivan

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

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
Rosamond Municipal Advisory Council P.O. Box 626 Rosamond, CA 93560	Mojave Town Council Bill Deaver, President P.O. Box 1113 Mojave, CA 93502-1113	Mojave Unified School Dist 3500 Douglas Mojave, CA 93501
Kern County Superintendent of Schools Attention Mary Baker 1300 17th Street Bakersfield, CA 93301	KernCOG 1401 19th Street - Suite 300 Bakersfield, CA 93301	Mojave Public Utility Dist 15844 "K" Street Mojave, CA 93501
Kern County Water Agency P.O. Box 58 Bakersfield, CA 93302-0058	East Kern Air Pollution Control District	Antelope Valley-East Kern Water Agency 6500 West Avenue N Palmdale, CA 93551
Mojave Airport 1434 Flightline Mojave, CA 93501	Community Development	County Clerk
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: Frank Bidart, President 4124 Chardonnay Drive Bakersfield, CA 93306	Los Angeles Audubon 926 Citrus Avenue Los Angeles, CA 90036-4929	Center on Race, Poverty & the Environment Attn: Marissa Alexander 1999 Harrison Street – Suite 650 San Francisco, CA 94612
Center on Race, Poverty & the Environmental/ CA Rural Legal Assistance Foundation 1012 Jefferson Street Delano, CA 93215	Defenders of Wildlife/ Kim Delfino, California Dir 980 - 9th Street, Suite 1730 Sacramento, CA 95814	Desert Tortoise Preserve Committee 4067 Mission Inn Avenue Riverside, CA 92501
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	Beth Boyst Pacific Crest Trail Program Manager 1323 Club Drive Vallejo, CA 94592
Anitra Kass Pacific Crest Trail Association 41860 Saint Annes Bay Drive Bermuda Dunes, CA 92203	Sierra Club/Kern Kaweah Chapter P.O. Box 3357 Bakersfield, CA 93385	Southern California Edison 2244 Walnut Grove, Ave, GO-1 Quad 2C Rosemead, CA 91770

Southern California Gas Co
1510 North Chester Avenue
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Southern California Gas Co
Transportation Dept
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Verizon California, Inc.
Attention Engineering Department
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David Laughing Horse Robinson
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Kern Valley Indian Council
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Kern Valley Indian Council
Historic Preservation Office
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Santa Rosa Rancheria
Ruben Barrios, Chairperson
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Lemoore, CA 93245

Tejon Indian Tribe
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Bakersfield, CA 93309

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

Tubatulabals of Kern County
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P.O. Box 226
Lake Isabella, CA 93240

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

San Fernando Band of Mission Indians
Attn: John Valenzuela, Chairperson
P.O. Box 221838
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Beyond Coal Campaign/Sierra Club
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U.S. Marine Corps
Attn: Patrick Christman
Western Regional Environmental Officer
Building 1164/Box 555246
Camp Pendleton, CA 92055-5246

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

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

This is to advise that the Kern County Planning and Natural Resources Department has prepared an Environmental Impact Report (EIR) for the project identified below. As mandated by State law, the minimum public review period for this document is 45 days. The document and documents referenced in the Draft EIR are available for review at the Planning Natural Resources Department, 2700 "M" Street, Suite 100, Bakersfield, CA 93301 or on the Departmental website (<https://kernplanning.com/environmental-doc/sanborn-solar-project/>).

A public hearing has been scheduled with the Kern County Planning Commission to receive comments on the document on: **May 14, 2020**, at 7:00 p.m. or soon thereafter, Chambers of the Board of Supervisors, First Floor, Kern County Administrative Center, 1115 Truxtun Avenue, Bakersfield, California.

The comment period for this document closes on **March 30, 2020**. 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: Sanborn Solar Project by Sanborn Solar, LLC (PP19102); Zone Change Case No. 56, Map No. 196; Zone Change Case No. 2, Map 212; Zone Change Case No. 59, Map No. 213, Conditional Use Permit No. 45, Map 196; Conditional Use Permit No. 5, Map No. 212; Conditional Use Permit No. 66, Map No. 213; and Mojave Specific Plan Amendment 30, Map 196 (Circulation).

Project Location: The project site is located approximately 14 miles southeast of the City of Tehachapi, approximately 1.5 miles southeast of the unincorporated community of Mojave, and approximately 7.5 miles southeast of the unincorporated community of Rosamond. The project site is bounded by SR 58 and the Mojave Air and Space Port to the north, open space to the east and the west, and Edwards Air Force Base to the south, adjacent to the southernmost portion of the project site. The site is located in Sections 22, 23, 26, 27, 35, Township 11 North, Range 12 West (SBB&M), Section 1, Township 10 North, Range 12 West (SBB&M), and Section 7, Township 10 North, Range 11 West (SBB&M), County of Kern, State of California.

Project Description: The project proponents are requesting: **(a)** Three (3) Zone Change Cases (ZCC) from the existing Zone District A-1 (Limited Agriculture) to A (Exclusive Agriculture) and from the existing Zone District A-1 H (Limited Agriculture -Airport Approach Height Combining) to A H (Exclusive Agriculture -Airport Approach Height Combining) for approximately 461 acres (ZCC No. 56, Map No. 196); from the existing Zone District A-1 to A for approximately 645 acres (ZCC No. 2, Map No. 212); and from the existing Zone District A-1 to A and from A-1 FPS (Limited Agriculture - Flood Plain Secondary Combining) to A FPS (Exclusive Agriculture - Flood Plain Secondary Combining) for approximately 320 acres (ZCC No. 59, Map No. 213); **(b)** Three (3) Conditional Use Permits (CUP), to allow for the construction and operation of a 300 MW solar photovoltaic electrical generating facility with up to 3GWh of energy storage (Section 19.12.030.G) in an A District (CUP No. 45, Map No. 196; CUP No. 5, Map No. 212; and CUP No. 66, Map No. 213); and **(c)** Amendment to the Mojave Specific Plan to remove a portion of the designated, but not constructed, arterial roadway of Purdy Avenue from United Street to Fifth Street (Specific Plan Amendment No. 30, Map 196). The project's permanent facilities would include service roads, overhead and underground transmission lines, a step-up conversion station, solar arrays, project substations, energy storage facilities, telecommunication equipment, perimeter security fencing, operations and maintenance facilities, and gen-tie lines.

Anticipated Significant Impacts on Environment: Aesthetics, Air Quality, Biological Resources, Noise, and Wildfire

Document can be viewed online at: <https://kernplanning.com/environmental-doc/sanborn-solar-project/>

For further information, please contact Ronelle Candia, Supervising Planner, at (661) 862-8997 or candiar@kerncounty.com.

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

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

The Bakersfield Californian
Mojave Desert News

RRC (2/3/2020)

cc: County Clerk (2) (with fee)
Environmental Status Board
Sierra Club/Kern Kaweah Chapter
LiUNA
Lozeau Drury, LLP

California Native Plant Society/Kern Chapter
Kern County Archaeological Society
Native American Heritage Pres. Council/Kern County
Center on Race, Poverty and Environment (2)
Supervisory District No. 2

SPA 30; ZC #56; CUP #45, Map #196
(EIR 02-18 - Sanborn Solar, LLC)
WO #PP19102
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Sc 02/04/20

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AGUIRRE TITO MARIO
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PO BOX 23902
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428 152 08 00 0
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428 191 12 00 6
AMATO Y LLC
P O BOX 1334
TEHACHAPI CA 95381-1334

244 432 17 00 7
AMBROSE GEORGE B & RACHEL E
TRUST
200 VIA COLUSA
PALOS VERDES CA 90274

429 042 25 00 4
AMER COUNTRY LAND LLC
63 VIA PICO PZ # 544
SAN CLEMENTE CA 92672-3845

235 132 56 00 7 **DUP**
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ADDRESS UNKNOWN

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ANTELOPE VALLEY E KERN WTR AG
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QUARTZ HILL CA 93536

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ARCA LILIA F
91-1201 KANEANA ST APT 3-D
EWA BEACH HI 96706

428 192 18 00 1
ARTIGA RONY E
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244 432 28 00 9
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SANTA ANA CA 92711

429 042 28 00 3
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244 234 08 00 7
BAYSHORE LLC
1875 E CENTURY PK STE 2230
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428 192 22 00 2 **DUP**
BERNARDO JUAN CARLOS S
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244 432 25 00 0
BLANCO MARK LUKE REQUIDAN
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428 173 08 00 3
BLUE CUBE VENTURE LLC
13089 PEYTON DR STE C473
CHINO HILLS CA 91709-6018

428 030 12 00 2
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CASTAIC CA 91384-3403

244 432 12 00 2
BOLTON WELTHA M TR
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428 173 07 00 0
BRADY MAL & PARTICIA E
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MARINA DEL REY CA 90295-3472

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CAREAMVID FAMILY L P
6774 LOS VERDES DR APT 2
RANCHO PALOS VE CA 90275-5552

428 202 34 00 9
CARLSON CHILDRENS TR
25612 GOLDENSPRING DR
DANA POINT CA 92629-1537

428 174 34 00 5
CHAN D SKIP
2215 WARFIELD AV # A
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428 191 31 00 1
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428 191 04 00 3
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CLIFFORD PATRICK
5132 MONTECITO PL
BOISE ID 83704

244 432 08 00 1
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LAUREL MD 20723-5797

429 042 18 00 4
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MARIA
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BOWIE MD 20715-1106

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429 160 16 00 9
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OXNARD CA 93033

428 030 29 00 2
COUNTY OF KERN
1115 TRUXTUN AV FLR 3
BAKERSFIELD CA 93301

428 191 30 00 8
DANOUS SARGON B
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CYPRESS CA 90630-0654

428 202 35 00 2
DAVIS RANDOLPH S & MELINDA
24 SYDNEY CI
HARPERS FERRY WV 25425

429 151 10 00 5
DAVIS RANDOLPH S & MELINDA L
24 SYDNEY CI
HARPERS FERRY WV 25425

244 413 58 00 7
DEL SOL PROPERTIES
12121 WILSHIRE BL STE 600
LOS ANGELES CA 90025

429 152 10 00 2
DEL SOL PROPERTIES INC
12121 WILSHIRE BL STE 600
LOS ANGELES CA 90025

429 042 36 00 6
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519 S HICKORY ST
MOUNT VERNON MO 65712

429 042 31 00 1
DISCOUNTLAND INC
2261 MONACO DR
OXNARD CA 93035-2915

428 192 02 00 4
DIZON FELIX L & JUDY D
3617 MC COVEY CT
LANCASTER CA 93535

428 191 10 00 0
DOOLY FAMILY TR
5328 PARKCREST ST
LONG BEACH CA 90808-1928

244 413 41 00 7
DYAS ROBERT K & KATHRYN M
P O BOX 687
ROSAMOND CA 93560

244 432 09 00 4 **DUP**
DYAS ROBERT KEITH & KATHRYN M
P O BOX 687
ROSAMOND CA 93560

429 160 27 00 1
DYKEHOUSE WILLIAM
1975 E TROTTER AV
MOJAVE CA 93501-7275

428 191 01 00 4
EAGLE DESERT VISTA CORP
PO BOX 2470
VICTORVILLE CA 92393-2470

429 151 25 00 9
EARWOOD DAVID BRIAN
PO BOX 987
MEADVIEW AZ 86444-0987

428 173 03 00 8
EASTERN KERN CO RESOURCE
CONSERVATION DIST
300 S RICHMOND RD
RIDGECREST CA 93555-4436

429 042 17 00 1
EDSON LOUISE M
50 MAIN ST APT 213
LADERA RANCH CA 92694-0557

429 151 53 00 0
ELLIS MARION L & VIRGINIA RUTH
618 VENICE WY APT A
INGLEWOOD CA 90302

428 140 05 00 4
ENGLE JASON BRIAN
10556 ILONA AV
LOS ANGELES CA 90064-2313

428 191 13 00 9
ENNIS MELISSA LYNN
12233 HERSHEY ST
SUN VALLEY CA 91352

428 174 35 00 8
EVANGELISTA FMLY TR
3206 DOUGLAS ST
SANTA ANA CA 92704

428 173 09 00 6
FARRELL MARY E
8502 WINDJAMMER DR
BAKERSFIELD CA 93312

429 042 21 00 2
FEAR HOWARD E & BETTY J
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244 432 24 00 7
FEY DAVID
812 N GRAND ST
ORANGE CA 92867-6814

244 432 22 00 1
FORECAST LAND CORP
PO BOX 36
WOODLAND HILLS CA 91365-0036

428 201 12 00 8
FOX STEPHEN C
P O BOX 8083
LA JOLLA CA 93038

428 201 13 00 1
FOX STEPHEN C & SCOTT C
PO BOX 8083
LA JOLLA CA 92038-8083

428 201 02 00 9 **DUP**
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FRIEDMAN BERNARD & BETTY E
11464 E RAINTREE DR
SCOTTSDALE AZ 85255-1878

428 202 50 00 5
GAOIRAN LUIS G & TERESITA T
440 KEA ST
KAHULUI HI 96732-1424

428 192 24 00 8
GARCIA JULIAN & OFELIA
5321 WEST SILVER DR
SANTA ANA CA 92703

244 233 01 00 9
GENUS L P
2006 HIGHWAY 395
FALLBROOK CA 92028

428 030 32 00 0 **DUP**
GENUS L P
2006 HWY 395
FALLBROOK CA 92028

428 020 07 00 5
GM GABRYCH FAMILY L P
2006 OLD HIGHWAY 395
FALLBROOK CA 92028-8816

429 151 06 00 4
GONZALES ANNE MAZUR
14381 LAKE ST
GARDEN GROVE CA 92643

428 191 03 00 0
GONZALES JONATHAN H
26070 LAKEVIEW AV
INGLESIDE IL 60041

429 050 32 00 3
GOSMEYER CLAYTON
PO BOX 92
PAYETTE ID 83661-0092

428 202 45 00 1
GRIFFETH LIV TR
5200 IRVINE BL SP 303
IRVINE CA 92620-2057

244 233 05 00 1
GS EQUITY RESOURCES II INC
P O BOX 8159
CALABASAS CA 91372

429 050 14 00 1
HALL JOSEPH C & GERTIE R
105 S JOAQUIN ST
COALINGA CA 93210-2416

428 192 16 00 5
HARDY RODNEY A
860 CALLE PLUMA
SAN CLEMENTE CA 92673-2721

428 202 42 00 2
HARRISON JOHN L
2424 WEST 1800 SOUTH
WESTHAVEN UT 84401

428 202 41 00 9
HAVENS CLOYD E & MARY P TRS
27529 POTOMAC DR
SUN CITY CA 92586

428 152 06 00 4
HAYNES ANTHONY
1240 SE JOHNSON AV
PULLMAN WA 99163-5413

429 152 18 00 6
HERNANDEZ MONICA Y AYALA
PO BOX 902064
PALMDALE CA 93590-2064

429 050 11 00 2
HERNANDEZ TERESO F
1801 LEWIS ST
BAKERSFIELD CA 93307-4530

428 152 04 00 8
HORVATH JENO & PAMELA INTER
VIVOEXEMP TRUST
16654 SOLEDAD CANYON RD # 517
SANTA CLARITA CA 91387

244 432 11 00 9
HOWE J&P FAMILY TRUST
12418 PRAIRIE ROSE WY
BAKERSFIELD CA 93312

429 042 02 00 7
HUNSLEY JOHN C
8305 KEOKUK AV
WINNETKA CA 91306

428 192 17 00 8
IRYAMI MOUSA & ALBERT
11872 WILSHIRE BL
W LOS ANGELES CA 90025

429 050 43 00 5
JENKINS VERNON LAMAR FMLY TR
2115 S MAGNOLIA AV
ONTARIO CA 91762

428 192 07 00 9
JIBILIAN ALBERT
8117 W MANCHESTER AV # 777
PLAYA DEL REY CA 90293

429 042 16 00 8
JUNGBLUTH R J TRUST
134 ARGONNE AV
LONG BEACH CA 90503

428 202 46 00 4
KADEN ROGER T
4643 CAPAY DR # 3
SAN JOSE CA 95118-2514

429 050 09 00 7
KEOAEN STACY
548 GRAND AV
SACRAMENTO CA 95838-3315

428 140 13 00 7
KILBY SIDNEY ROBERT TRUST
P O BOX 1085
MOJAVE CA 93502

428 173 04 00 1
KIRKEBY LENNY E & CAROLEE F
2258 SAN GORGONIO RD
LA CANADA CA 91011-1351

428 202 36 00 5
KIRKSEY FAMILY TRUST
512 GALLEON WY
SEAL BEACH CA 90740-5939

429 152 05 00 8
KITAGAWA RUSSELL TR
1043 CHEKHOV DR
RIVERSIDE CA 92506-4904

428 192 20 00 6
KWON MI HEE LIM
14413 PEBBLE CREEK WY
GARDENA CA 90247

244 432 01 00 0
LANDSIEDEL TERRY V
P O BOX 1467
ROSAMOND CA 93560

428 152 02 00 2
LAW ARDEN S
PO BOX 4971
COVINA CA 91723

428 192 19 00 4
LE THU VAN & BAO YEN
7273 CROCKETT CT
FONTANA CA 92336-2912

244 432 14 00 8
LEE KWANG SOO & SHIN GOO
11743 VALLEY BL
EL MONTE CA 91732-3037

428 152 07 02 5
LEMANN WALTER
439 E MCGILVRA BL
SEATTLE WA 98112-5045

244 432 21 00 8
LIN JENNIFER J
2208 S DATE AV
ALHAMBRA CA 91803

429 042 44 00 9 **DUP**
LINGLE JOSEPH
ADDRESS UNKNOWN

244 432 30 00 4
LIVINGSTONE ED FAM REV LIV TR
730 CRYSTAL DR
GRANTS PASS OR 97527-9404

429 152 04 00 5
LOPEZ ADA
12719 YORKSHIRE DR
APPLE VALLEY CA 92308

428 192 23 00 5
LUKINS RODNEY G
1536 MARYLAND AV
W SACRAMENTO CA 95691

429 042 14 00 2
MADRID KYLE BRANDON
39972 MILLSTREAM LN
MADERA CA 93636-8166

428 192 14 00 9
MALEKZADEH ALI A & ALVAREZ M
19 E CHATFIELD PL
PAINTED POST NY 14870

428 192 11 00 0
MALEKZADEN ALI A
19 E CHATFIELD PL
PAINTED POST NY 14870

429 042 06 00 9
MATTHEWS ALLEN W & LINDA LEE
14305 SW BEEF BEND RD APT 8
PORTLAND OR 97224-1931

428 152 11 00 8
MAYO CASIANO M & PERLA J
2311 ROOSEVELT DR # 1
ANCHORAGE AK 99517

429 042 30 00 8
MILLER HELEN E
1121 W VALLEY BL STE I144
TEHACHAPI CA 93561-2171

428 030 20 00 5
MOJAVE 189 LLC
9960 W CHEYENNE AV STE 212
LAS VEGAS NV 89129-7703

428 020 06 00 2
MOJAVE 729 LAND LLC
12671 HIGH BLUFF DR STE 150
SAN DIEGO CA 92130

428 140 04 00 1 **DUP**
MOJAVE PUBLIC UTILITY DIST
ADDRESS UNKNOWN

429 152 20 00 1
MONTES NEMECIO A & GARCIA
MARIA ESPERANZA
10482 SILVER ST
MOJAVE CA 93501-7050

428 192 06 00 6
MOODY CANIDA C
13712 MILL VALLEY RD
VALENCIA CA 91355-2641

428 191 05 00 6
MOORE DAVID M
5020 VIA LUCIA
YORBA LINDA CA 92886

429 152 07 00 4
MORTIMER ROGER D
1609 DALTON AV
MOJAVE CA 93501-7045

429 151 07 00 7
MURAKAMI TR
3334 BENT TWIG LN
DIAMOND BAR CA 91765-3811

429 151 22 00 0
MURRAY WILLIAM A JR & LINDA J
PO BOX 4175
EVERETT WA 98204-0018

428 202 47 00 7
NAPOLITANO STEVEN A
1305 WALNUT AV
MANHATTAN BEACH CA 90266

428 161 03 00 1
NAZARIAN MARY H
27871 ENCANTO
MISSION VIEJO CA 92692-2609

428 152 05 00 1
NGUYEN BINH N & HUYNH CHIN T
16098 MOUNT HICKS ST
FOUNTAIN VALLEY CA 92708-1723

428 192 26 00 4
NOSEWORTHY PHILIP A & PATRICIA
PO BOX 5682
SUGARLOAF CA 92386-5682

244 234 10 00 2
O BRIEN SUSAN
3921 SUNSET LN
OXNARD CA 93035-3948

428 202 39 00 4
O NEILL REV TR
507 N RODEO DR
BEVERLY HILLS CA 90210

429 042 03 00 0
OLSON LEE W & KATHLEEN A
FAMILY TRUST
5162 ROTHERHAM CI
WESTMINSTER CA 92683

428 192 12 00 3
ONODERA FAMILY TR
2300 BARTON CREEK BL APT 10
AUSTIN TX 78735-1684

429 050 03 00 9
OWEN STEPHEN R TR
1760 DESERT POPPY LN
BEAUMONT CA 92223-8625

428 192 05 00 3
PACIFIC GAS & ELECTRIC CO
1 MARKET PZ STE 400
SAN FRANCISCO CA 94105-1004

429 042 37 00 9
PAIGE FAMILY TR
11807 ALAMO BLANCO DR # 401
SAN ANTONIO TX 78233

428 174 32 00 9
PANG SHIOULAN
1609 SOUTH CAMPBELL
ALHAMBRA CA 91803

428 174 31 00 6
PANG SHIOULE
1609 CAMPBELL AV
ALHAMBRA CA 91803

244 432 18 00 0
PARK LLOYD SANG
12420 INDIAN RIVER DR
APPLE VALLEY CA 92308-6773

428 191 06 00 9
PARKS STEPHEN W TRUST
724 S VELARE ST
ANAHEIM CA 92804

244 413 40 00 4
PAULEY JOSEPH L & BEVERLY M TR
P O BOX 57
ROSAMOND CA 93560

428 202 48 00 0
PEREZ PEDRO & CONNIE FAMILY
TRUST
828 S 6TH ST
MONTEBELLO CA 90640-5914

244 233 07 00 7
PESTAL TRUST
P O BOX 1385
SAN CLEMENTE CA 92674

428 191 11 00 3
PONG CHAI PONG
5001 VIA VERDE ST
ALTA LOMA CA 92337

244 233 08 00 0
PRONO TR
1736 FREEPORT TR
SAN PEDRO CA 90732-4045

428 202 40 00 6
PYERS EDWARD C & DONNA J
9207 RAMBLEWOOD DR
HARRISON TN 37341

244 432 07 00 8
RAMIREZ ANITA C TR
14120 OCEANGATE AV
HAWTHORNE CA 90250

429 152 09 00 0
REDMAN MARSHALL & DORIS E
12121 WILSHIRE BL STE 600
LOS ANGELES CA 90025

428 192 03 00 7
REIFMAN IRVING
12121 WILSHIRE BL STE 1120
LOS ANGELES CA 90025-1164

429 042 08 00 5
RODRIGUEZ ROSARIO G
49846 W 110TH ST
LANCASTER CA 93536-9411

428 202 33 00 6
RONAS ERLINDA P
77 SARRAGUT ST
SAN FRANCISCO CA 94112

244 432 26 00 3
ROYNON DEAN & ELSIE FAMILY
TRUST
250 E TELEGRAPH RD
FILLMORE CA 93015-2143

429 050 33 00 6
RUDENTE RUDOLFO B & LETICIA V
ADDRESS UNKNOWN

244 413 61 00 5
RUSEN HARTLEY DAVID
10325 LUBAO AV
CHATSWORTH CA 91311

428 192 01 00 1
SAHA MRINMOY & SUSHMITA
18418 ALGIERS ST
PORTER RANCH CA 91326-2004

235 132 16 00 1
SAHOTA MANDEEP K
8499 MONTE CRISTO AV
LIVINGSTON CA 95334-9354

429 152 03 00 2
SANCHEZ SAMUEL & DINA
19213 FRIAR ST
TARZANA CA 91335-6633

428 192 25 00 1
SANDERS STEVEN D
359 SPRING ST # 3
SPARTANBURG SC 29306

428 152 07 01 6
SEAL TRUDY TRUST
4267 MARINA CITY DR # 314
MARINA DEL REY CA 90292-5810

429 042 09 00 8
SEBESTYEN JULIE BARBARA
PO BOX 542
LA MIRADA CA 90637-0542

428 202 49 00 3
SELIS LAURA
1200 ARCADIA AV APT B
AUSTIN TX 78757-3044

429 151 52 00 7
SELVIDGE GLENN E
672 DELA CRUZ DR
WINNSBORO TX 75494-3053

428 191 02 00 7
SERRATO ALFREDO
44710 DIVISION ST APT 1802
LANCASTER CA 93535-2576

428 152 03 00 5
SERVICE ROCK PRODUCTS LP
200 S MAIN ST STE 200
CORONA CA 92882-2212

244 432 23 00 4 **DUP**
SEVERINO JOHN ARTHUR
ADDRESS UNKNOWN

244 233 02 00 2
SF PACIFIC PROPERTIES INC
2235 FARADAY AV STE O
CARLSBAD CA 92008

429 151 09 00 3
SHAKED BARAK
6480 W DIABLO DR
LAS VEGAS NV 89118-1827

244 432 02 00 3
SHANNON ROBERT E TRUST
4835 DEL RIO RD
ATASCADERO CA 93422-1533

244 432 16 00 4
SMITH FAMILY TR
2147 SAN ANTONIO AV
UPLAND CA 91786

428 140 09 00 6
SOUMEKH MICHAEL & RACHEL
1140 S ALFRED ST
LOS ANGELES CA 90035

428 192 15 00 2
SPUHLER BETTY F TRUST
P O BOX 252
ACME WA 98220-0252

429 152 16 00 0
STAVROPOULOS ELVIA
5373 WHITTIER BL
LOS ANGELES CA 90022-4033

429 160 17 00 2 **DUP**
STAVROPOULOS ELVIA E
REVOCABLE TRUST
5373 WHITTIER BL
LOS ANGELES CA 90022-4033

429 160 23 00 9
STAVROPOULOS ELVIA TR
5373 WHITTIER BL
LOS ANGELES CA 90022-4033

428 161 02 00 8
TANG DAVID K
1942 SAMARA DR
ROWLAND HTS CA 91745

428 161 01 00 5
TANG SAMANTHA K
1942 SAMARA DR
ROLLAND HEIGHTS CA 91748

244 432 03 00 6
TIVENS RANDY L & LISA
PO BOX 36
WOODLAND HILLS CA 91365-0036

429 151 08 00 0
TOMES MARK D & PEDERSON
TOMES MICHELLE A
1764 O MALLEY AV
UPLAND CA 91784

429 042 40 00 7
TONG LY HUONG P
PO BOX 2411
LA HABRA CA 90632-2411

429 152 01 00 6
TONG NHIEM & LY HUONG P
PO BOX 2411
LA HABRA CA 90632-2411

429 050 31 00 0
TRAN CHIEU THANH REVOCABLE
LIVING TRUST
13281 ROAN RD
GARDEN GROVE CA 92843-1611

244 432 05 00 2
TRIPLE E DEV CORP
5560 S FORT APACHE RD STE 100
LAS VEGAS NV 89148-7699

429 050 29 00 5
TUBAO TERESITA S
1989 NEWCASTLE DR
OXNARD CA 93036

244 250 01 00 4
U S A
450 GOLDEN GATE AVE
SAN FRANCISCO, CA 94102

429 160 26 00 8
U S BK
4801 FREDERICA ST
OWENSBORO KY 42301-7441

244 432 06 00 5
UNITED TR DEED INC
PO BOX 2118
ARCADIA CA 91077

428 152 01 00 9
UNIVERSITY OF SO CALIFORNIA
620 W MC CARTHY WY STE 5
LOS ANGELES CA 90089

428 192 13 00 6
VIA BURTON ASSCS LLC
4956 VIA DIEGO
YORBA LINDA CA 92887

429 152 21 00 4
VILLEGAS NEURL E & ALCAZAR
IDEANIA
1700 KIBBY RD
MERCED CA 95341-9301

428 192 10 00 7
WALLACE RUTH M & SAMUEL H
3425 HERON LN
PASO ROBLES CA 93446

244 234 02 00 9
WEBSTER CHARLEEN
5161 DECATUR DR
LA PALMA CA 90623

429 152 02 00 9
WEISSMAN RICHARD RECEIVER
12121 WILSHIRE BL STE 600
LOS ANGELES CA 90025

428 174 33 00 2
WESTERN NATURAL RESOURCES
11512 EL CAMINO REAL STE 370
SAN DIEGO CA 92130-3025

428 201 16 00 0
WESTN NATURAL RESOURCES LLC
11512 EL CAMINO REAL STE 370
SAN DIEGO CA 92130-3025

429 042 05 00 6
WESTN NATURAL RESOURCES LLC
11512 EL CAMINO REAL STE 70
SAN DIEGO CA 92130-3024

429 152 19 00 9
WESTN NATURAL RESOURCES LLC
11512 EL CAMINO REAL # 370
SAN DIEGO CA 92130-3025

428 192 04 00 0
WGLANDS LLC
PO BOX 1084
HIGHLAND PARK IL 60035-7084

429 042 20 00 9
WIBERG TRUST
39015 CLUBHOUSE DR
TUSCON AZ 85739

244 413 59 00 0
WILSON THOMAS J & YURIKO
91-975 OLOLANI ST
EWA BEACH HI 96706

429 042 19 00 7
WINNE BARBARA
1817 E OCEAN BL
LONG BEACH CA 90802

429 042 04 00 3
WOOD ALLAN & MERKER RONALD E
24122 EL MIRAGE
LAGUNA NIGUEL CA 92677

428 192 21 00 9
WOODLEY REALTY CORP
1246 5 CAHUENGA BL
LOS ANGELES CA 90038

429 151 24 00 6
YEN MICHAEL C & LORINDA I
114 N 4TH ST #B
ALHAMBRA CA 91801

428 201 01 00 6
YU JEFFREY T & OLIVIA L FAM TR
20932 SARAHILLS DR
SARATOGA CA 95070-4383

428 191 09 00 8
ADAMS ARNE & PATRICIA FMLY TR
47730 VIA MONTANA
LA QUINTA CA 92253

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P. O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613

For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2019060259

Project Title: Sanborn Solar Project by Sanborn Solar, LLC

Lead Agency: Kern County Planning Department

Contact Person: Ronelle Candia

Mailing Address: 2700 "M" Street Suite 100

Phone: (661) 862-8997

City: Bakersfield

Zip: 93301-2323

County: Kern

Project Location: County: Kern City/Nearest Community: Mojave

Cross Streets: SR 14 and Silver Queen Road and SR 58 (Business) and Lone Butte Road Zip Code: 93501

Lat. / Long.: 35° 2'51.9072 N / 118° 10'17.7060W

Total Acres: 2,006

Assessor's Parcel No.: Multiple

Section: Multiple

Twp.: Multiple

Range: Multiple

Base: SBB&M

Within 2 Miles: State Hwy #: SR 14 and SR 58 (Business)

Waterways: N/A

Airports: Mojave Air and Space Port

Railways: BNSF

Schools: Mojave High School

Document Type:

CEQA: ☐ NOP
☐ Early Cons
☐ Neg Dec
☐ Mit Neg Dec

☒ Draft EIR
☐ Supplement/Subsequent EIR
(Prior SCH No.) _____
Other _____

NEPA: ☐ NOI
☐ EA
☐ Draft EIS
☐ FONSI

Other: ☐ Joint Document
☐ Final Document
☐ Other _____

Local Action Type:

☐ General Plan Update
☐ General Plan Amendment
☐ General Plan Element
☐ Community Plan

☒ Specific Plan
☐ Master Plan
☐ Planned Unit Development
☐ Site Plan

☒ Rezone
☐ Prezone
☒ Use Permit
☐ Land Division (Subdivision, etc.)

☐ Annexation
☐ Redevelopment
☐ Coastal Permit
☐ Other _____

Development Type:

☐ Residential: Units _____ Acres _____
☐ Office: Sq.ft. _____ Acres _____ Employees _____
☐ Commercial: Sq.ft. _____ Acres _____ Employees _____
☐ Industrial: Sq.ft. _____ Acres _____ Employees _____
☐ Educational _____
☐ Recreational _____

☐ Water Facilities: Type _____ MGD _____
☐ Transportation: Type _____
☐ Mining: Mineral _____
☒ Power: Type Solar _____ MW 300
☐ Waste Treatment: Type _____ MGD _____
☐ Hazardous Waste: Type _____
☒ Other: 300 GWh of Energy Storage

Project Issues Discussed in Document:

☒ Aesthetic/Visual
☒ Agricultural Land
☒ Air Quality
☒ Archeological/Historical
☒ Biological Resources
☐ Coastal Zone
☒ Drainage/Absorption
☐ Economic/Jobs
☐ Other _____

☐ Fiscal
☒ Flood Plain/Flooding
☒ Forest Land/Fire Hazard
☒ Geologic/Seismic
☒ Minerals
☒ Noise
☐ Population/Housing Balance
☒ Public Services/Facilities

☐ Recreation/Parks
☐ Schools/Universities
☒ Septic Systems
☐ Sewer Capacity
☒ Soil Erosion/Compaction/Grading
☒ Solid Waste
☒ Toxic/Hazardous
☒ Traffic/Circulation

☒ Vegetation
☒ Water Quality
☒ Water Supply/Groundwater
☒ Wetland/Riparian
☒ Wildlife
☐ Growth Inducing
☒ Land Use
☒ Cumulative Effects

Present Land Use/Zoning/General Plan Designation:

Undeveloped Land. Zoning: A (Exclusive Agriculture), A-1 (Limited Agriculture), A-1 H (Limited Agriculture - Airport Approach Height Combining); A-1 FPS (Limited Agriculture - Floodplain Secondary Combining); Mojave Specific Plan: 8.5 (Resource Management - Minimum 20 Acre Size); and West Edwards Road Settlement Specific Plan: 8.5 (Resource Management (Minimum 20 acres)) and 8.5/2.4 ((Resource Management (Minimum 20 acres))/Steep Slope)

Project Description: *See Attached.*

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 checked="" type="checkbox"/> S Office of Historic Preservation
<input type="checkbox"/> California Highway Patrol	<input type="checkbox"/> Office of Public School Construction
<input checked="" type="checkbox"/> X CalFire	<input type="checkbox"/> Parks & Recreation
<input checked="" type="checkbox"/> S Caltrans District # <u>6 & 9</u>	<input type="checkbox"/> Pesticide Regulation, Department of
<input checked="" type="checkbox"/> S 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 type="checkbox"/> Other _____
<input type="checkbox"/> Housing & Community Development	<input type="checkbox"/> Other _____
<input checked="" type="checkbox"/> S Integrated Waste Management Board	
<input checked="" type="checkbox"/> X Native American Heritage Commission	

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

Starting Date February 14, 2020 Ending Date March 30, 2020

Lead Agency (Complete if applicable):

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

Signature of Lead Agency Representative: _____ /s/ _____ Date: 2/14/2020
Ronelle Candia, Supervising Planner

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

Project Description: Sanborn Solar Project, by Sanborn Solar, LLC (project proponent), is requesting the land use entitlements necessary to facilitate the construction and operation of a solar photovoltaic power generating facility and associated facilities that would generate a combined total of approximately 300 megawatts (MW) of renewable electrical energy and up to 3GWh of energy storage capacity on approximately 2,006 acres of privately-owned land in unincorporated Kern County. Implementation of the project as proposed would include: **(a)** Three (3) Zone Change Cases (ZCC) from the existing Zone District A-1 (Limited Agriculture) to A (Exclusive Agriculture) and from the existing Zone District A-1 H (Limited Agriculture -Airport Approach Height Combining) to A H (Exclusive Agriculture -Airport Approach Height Combining) for approximately 461 acres (ZCC No. 56, Map No. 196); from the existing Zone District A-1 to A for approximately 645 acres (ZCC No. 2, Map No. 212); and from the existing Zone District A-1 to A and from A-1 FPS (Limited Agriculture - Flood Plain Secondary Combining) to A FPS (Exclusive Agriculture - Flood Plain Secondary Combining) for approximately 320 acres (ZCC No. 59, Map No. 213); **(b)** Three (3) Conditional Use Permits (CUP), to allow for the construction and operation of a 300 MW solar photovoltaic electrical generating facility with up to 3GWh of energy storage (Section 19.12.030.G) in an A District (CUP No. 45, Map No. 196; CUP No. 5, Map No. 212; and CUP No. 66, Map No. 213); and **(c)** Amendment to the Mojave Specific Plan to remove a portion of the designated, but not constructed, arterial roadway of Purdy Avenue from United Street to Fifth Street (Specific Plan Amendment No. 30, Map 196). The project's permanent facilities would include service roads, overhead and underground transmission lines, a step-up conversion station, solar arrays, project substations, energy storage facilities, telecommunication equipment, perimeter security fencing, operations and maintenance facilities, and gen-tie lines.

Draft

Environmental Impact Report

SCH# 2019060259

Volume 1
Chapters 1 through 10

SANBORN SOLAR PROJECT
by Sanborn Solar, LLC (PP19102)

Zone Change Case No. 56, Map No. 196
Zone Change Case No. 2, Map No. 212
Zone Change Case No. 59, Map No. 213
Conditional Use Permit No. 45, Map No. 196
Conditional Use Permit No. 5, Map No. 212
Conditional Use Permit No. 66, Map No. 213
Mojave Specific Plan Amendment No. 30, Map 196



Kern County
Planning and Natural Resources Department
Bakersfield, California

February 2020

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1.1 Introduction

The Sanborn Solar Project (proposed project), proposed by Sanborn Solar, LLC (project proponent/operator), would develop a photovoltaic (PV) solar facility and associated infrastructure necessary to generate a combined 300 megawatts (MW) of renewable electrical energy and up to 3 gigawatt-hours (GWh) of energy storage capacity. The proposed project consists of two discontinuous sites, the northern site and the southern site, each of which would contain solar and energy storage facilities, which together would comprise the approximately 2,006-acre project site. The northern site is approximately 1,041 acres and the southern site is approximately 965 acres. Each site has two options for interconnection. Interconnection Option 1 consists of a 230 kilovolt (kV) generation tie (gen-tie) constructed from an onsite project substation, located near Lone Butte Road, which would connect to existing transmission lines with connection equipment situated on up to 10 acres of land at the corner of United Street and Purdy Avenue, or travel west to the Southern California Edison (SCE) Windhub and/or Westwind Substation. Interconnection Option 2 consists of a 34.5 kV collection line constructed from the western limits of the project site near Lone Butte Road and travel west to a step-up conversion station. At the United Street step-up conversion station, the 34.5 kV power would be stepped-up to a 230 kV power for delivery to the SCE Windhub and/or Westwind Substation.

The project proponent/operator is requesting three Conditional Use Permit (CUPs) from Kern County to authorize the construction and operation of the 300 MW renewable electrical energy and energy storage facilities (CUP 45, Map 196; CUP 5, Map 212; CUP 66, Map 213). The project proponent/operator is also requesting three Zone Change Cases (ZCCs) (ZCC 56, Map 196; ZCC 2, Map 212; ZCC 59, Map 213) and a Specific Plan Amendment (SPA) (SPA 30, Map 196) to remove a portion of the designated, but not constructed, arterial roadway of Purdy Avenue from United Street to Fifth Street. The project proponent/operator is also requesting California Environmental Quality Act (CEQA) review for the project.

Table 1-1, *Project Assessor Parcel Numbers (APNs) – Sanborn Solar Project*, below, identifies the Assessor Parcel Numbers (APN) for the project site.

This Draft Environmental Impact Report (EIR) has been prepared by Kern County as the Lead Agency under CEQA. The Draft EIR provides information about the environmental setting and impacts of the project and alternatives. It informs the public about the project and its impacts and provides information to meet the needs of local, State, and federal permitting agencies that are required to consider the project. The EIR will be used by Kern County to determine whether to approve the requested CUPs (CUP 45, Map 196; CUP 5, Map 212; CUP 66, Map 213), the requested ZCCs (ZCC 56, Map 196; ZCC 2, Map 212; ZCC 59, Map 213), and the requested SPA (SPA 30, Map 196) required for the project.

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

TABLE 1-1: PROJECT ASSESSOR PARCEL NUMBERS (APNS) – SANBORN SOLAR PROJECT

Site	APN	Acres (approx.)	Zoning	Mojave Specific Plan	West Edwards Road Settlement Specific Plan
Northern	428-020-06	160	A	8.5	N/A
	428-020-07	160	A-1, A-1 H	8.5	N/A
	428-030-02	108.64	A, A-1	8.5	N/A
	428-030-04	160	A	8.5	N/A
	428-030-05	120	A-1	8.5	N/A
	428-030-06	40	A	8.5	N/A
	428-030-07	40	A	8.5	N/A
	428-030-08	40	A	8.5	N/A
	428-030-09	40	A	8.5	N/A
	428-030-28	2.9	A	8.5	N/A
	428-030-31	97.74	A	8.5	N/A
	428-030-32	72.49	A-1	8.5	N/A
Southern	244-233-01	325.48	A-1	N/A	8.5, 8.5/2.4
	244-233-02	320	A-1	N/A	8.5, 8.5/2.4
	429-030-02	320.17	A-1, A-1 FPS	8.5, 8.5/2.4	8.5, 8.5/2.4
Total		2,006			

1.2 Project Summary

The proposed project would develop a solar PV generating facility. As shown in Chapter 3, *Project Description*, in Figure 3-1, *Site Vicinity*, and Figure 3-2, *Project Boundary*, of this EIR, the project is located in the south-eastern portion of Kern County near the unincorporated community of Mojave. The proposed project consists of two discontinuous sites, each of which would contain solar and energy storage facilities, which together would comprise the project site. The northern site is approximately 1,041 acres and the southern site is approximately 965 acres. The project would generate a total of 300 MW of renewable electrical energy and up to 3 GWh of energy storage capacity for delivery to the Statewide grid. The proposed project would construct either a gen-tie line or a collection line that would ultimately interconnect to the existing SCE Windhub and/or Westwind Substations. See Section 1.5.4, *Project Characteristics*, below, for a detailed description of the components of the proposed project, including: solar PV panels, solar trackers, electrical collection systems, the energy storage system, substations, the Operations & Maintenance (O&M) facility, onsite meteorological stations, site access and security, and electrical interconnection to transmission owner infrastructure.

1.2.1 Entitlements Required

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

Kern County

- Consideration and certification of Final EIR
- Adoption of 15091 Findings of Fact and 15093 Statement of Overriding Considerations
- Approval of proposed Mitigation Measure Monitoring Program
- Approval by the Kern County Board of Supervisors for proposed changes in zone classification
- Approval by the Kern County Board of Supervisors for proposed conditional use permits for the project site
- Specific Plan Amendment No. 30, Map No. 196 (Circulation Element)
- Kern County grading and building permits
- Kern County encroachment permits

Other Responsible Agency Entitlements

- U.S. Fish and Wildlife Service Habitat Conservation Plan (if required).
- California Department of Fish and Wildlife (CDFW), Lake and Streambed Alteration Agreement or Incidental Take Permit or Habitat Conservation Plan (if required).
- Regional Water Quality Control Board – Lahontan Region National Pollutant Discharge Elimination System Construction General Permit and Section 401 certification (if required).
- California Department of Transportation Right-of-Way Encroachment Permit, and Permit for Transport of Oversized Loads.
- Eastern Kern County Air Pollution Control District Authority to Construct/Permit to Operate/Fugitive Dust Control Plan.

1.3 Relationship of the Project to Other Solar Projects

The project is being developed independently of other approved or proposed solar projects in the County. If approved, the Sanborn Solar Project, would be subject to their own use permits, conditions of approval, interconnection agreements, and power purchase agreement (PPA). The County understands that the Sanborn Solar Project facilities would be built and operated independently of any other solar project, and, if approved, would not depend on any other solar project for economic viability. The proposed project would involve constructing either a 230 kV gen-tie or a 34.5 kV collection line, each of which would ultimately connect to the SCE Windhub and/or Westwind Substations.

There are several proposed, existing, and permitted solar energy and transmission projects in the region where the project site is located. As shown in Chapter 3, *Project Description*, **Figure 3-6, Surrounding Solar Projects**, the Edwards AFB Solar Project, located adjacent to the project's southern boundary, is currently in the planning stage. The High Desert Solar Project is immediately west of the project site and The RE Columbia Solar Project, RE Columbia Two Solar Project, RE Columbia Three Solar Project, and RE Rio Grande Solar Project, approximately 1.5 miles to the west, were approved in 2011 and are currently operational. The RE Clearwater Solar Project and RE Yakima Solar Project, approximately 1.8 miles to the northwest, was approved in 2014, but to date has not been constructed. The Windhub Solar Project, approximately 7 miles to the west, was approved by the Board of Supervisors in January 2019 and is currently under construction. The SEPV Solar Project, approximately 7.5 miles to the west, is currently operational.

1.4 Purpose and Use of the EIR

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

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

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

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

1.5 Project Overview

1.5.1 Project Objectives

The project has the following objectives:

- Establish a large-scale solar PV and energy storage power-generating facility of sufficient size and configuration to produce reliable electricity in an economically feasible and commercially financeable manner that can be marketed to different power utility companies.
- Develop a site that was partially previously disturbed (northern site) in proximity to transmission infrastructure in order to minimize environmental impacts.
- Use proven and established PV and energy storage technology that is efficient, requires low maintenance, and is recyclable.
- Maximize the use of existing transmission infrastructure.
- Ensure that the project can be constructed in a technologically feasible manner and operated in a manner that allows electricity to be provided at a competitive price.
- Assist Kern County in promoting its role as the State's leading producer of renewable energy;
- Provide green jobs to Kern County and the state of California;
- Site and design the project in an environmentally responsible manner consistent with current Kern County guidelines.
- Support California's efforts to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006, which requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under Senate Bill 32, which requires that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit by 2030.

1.5.2 Regional Setting

The project is located at the western edge of the Antelope Valley on lands that gradually slope downward from the northwest to the southeast. The topography of the project area is relatively flat as the project site is south of the Tehachapi Mountains, with the exception of scattered hills in the surrounding area up to approximately 200 feet in height. Desert vegetation dominates the region. Cities within the vicinity of the project site are the City of California City in Kern County and the Cities of Lancaster and Palmdale in Los Angeles County, which are approximately 9 miles northeast, 18 miles southeast, and 26 miles southeast of the project site, respectively.

1.5.3 Surrounding Land Uses and Project Site Conditions

Elevations across the project site range from approximately 2,660 feet above mean sea level in the northwest portion of the site to approximately 2,500 feet above mean sea level in the southeast portion of the site. Existing development in the project vicinity includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance

facilities, mining, wind and solar energy, and meteorological towers. The Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail, or PCT) is approximately 3.16 miles north of the gen-tie line corridor, approximately 8.5 miles northwest of the northern site, and approximately 14.6 miles northwest of the southern site.

The community of Mojave is directly north of the site, including the Mojave Air and Space Port directly north of SR-58. The Burlington Northern Santa Fe (BNSF) Railway forms the western edge of the northern site and the gen-tie line crosses the BNSF Railway in two locations. The southern site is directly north of Edwards AFB.

The project site is not designated by the California Department of Conservation (DOC) as prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The DOC designates the project site as Nonagricultural and Natural Vegetation, Grazing Land, and Vacant or Disturbed Land (DOC, 2018). APN 429-030-02, which is approximately 320 acres of the project site, is within the Kern County Agricultural Preserve Number 24 boundary.

Private land within locally designated agricultural preserve areas are eligible for enrollment under a Williamson Act contract. Participation in the Williamson Act program, which is voluntary for landowners, is dependent on a County's willingness to adopt and implement the program. The rules of each agricultural preserve specify the allowed uses. Local governments may identify compatible uses that can be permitted under a use permit (DOC, 2015); which the County does by way of its Exclusive Agriculture zone. Additionally, California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve.

Therefore, the proposed project would be compatible with the Kern County Agriculture Preserve No. 24. Further, there are no parcels within the project site that are under any Williamson Act contracts or being used for agriculture.

The majority of the project site is not located within a Federal Emergency Management Agency (FEMA) designated flood zone. However, there are portions of both the northern and southern project site within FEMA Zone A, indicating those areas are within the 100-year floodplain as depicted in Chapter 3, *Project Description*, **Figure 3-7, FEMA Flood Zone Hazard**.

Based on a review of records maintained by the California Department of Conservation/Division of Oil, Gas and Geothermal Resources (DOGGR), wells were not identified on the project site (<https://maps.conservation.ca.gov/doggr/wellfinder/#close>). Records maintained by the Kern County Assessor indicated there is one Mineral Rights APN within the boundaries of the project site.

The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and criteria by which the County can address compatibility issues when making planning decisions concerning airports and military aviation operations. The proposed solar facility would be located within the Airport Influence Areas of the Mojave Air and Space Port, which is operated by the East Kern Airport District (EKAD) and within the vicinity of Edwards AFB, which is a military aviation installation. Section 4.9 of the ALUCP addresses the Mojave Air and Space Port and land uses and procedures relative to its aviation and including height restrictions, and other compatibility criteria. In addition, Section 4.17.3 of the ALUCP requires that the Edwards AFB be notified of development that falls within identified notification categories. Chapter 3, *Project Description*, **Figure 3-8, ALUCP in Relation to the Project Site**, shows the project site and its vicinity, with respect to the ALUCP zones.

The project would be served by the Kern County Sheriff's Office (KCSO) for law enforcement and public safety, Kern County Fire Department (KCFD) for fire protection, and Kern County Medical Emergency Service for emergency medical and rescue services. The closest KCSO Substation is the Mojave Substation located approximately 1.5 miles west of the northern site at 1171 SR-58 in the community of Mojave. The nearest KCFD fire station that would serve the project is Station No. 14 (Mojave), located at 1953 SR-58 in the community of Mojave, approximately 1.8 miles northwest of the project site. The nearest hospitals are the Antelope Valley Hospital, in the City of Lancaster, approximately 20 miles to the south and the Tehachapi Hospital, in the City of Tehachapi, approximately 18.5 miles to the northwest. The nearest school to the project site is Mojave High School, located approximately 2 miles northwest in the community of Mojave.

1.5.4 Project Characteristics

The proposed project includes the development of a 300 MW PV solar energy-generating facility and associated infrastructure. The project site is shown in Chapter 3, *Project Description*, Figure 3-2, *Project Boundary*, of this EIR. Conceptual site plans for the project site is shown in Figure 3-3, Figure 3-3a, Figure 3-3b, Figure 3-4, Figure 3-4a, and Figure 3-4b. Figure 5a and Figure 3-5b display site plans for the northern and southern sites, respectively. The project would include the following components:

- Installation of up to a total combined 300-MW of solar PV modules, mounted either on a galvanized metal fixed-tilt or single-axis racking system. The mounting systems for the modules would be mounted on steel support posts that would be pile driven into the ground;
- Installation of an energy storage facility and accessories that would provide energy storage capacity of up to 3 GWh for the electrical grid;
- A collector substation including circuit breakers, disconnect switches, metering protection equipment, and main step-up transformer(s);
- Potential upgrades to the existing SCE Windhub Substation and/or Westwind Substation and installation of new circuits, lines, switches, utility poles, etc.;
- An O&M facility on the northern site to maintain the facilities;
- Overhead and underground collection systems throughout the solar facilities (the collection systems would be aggregated at multiple circuit breakers or medium-voltage switchgear positions within the project facilities, leading to the collector substation);
- 34.5 kV to 230 kV step-up conversion station and/or 230 kV gen-tie line to connect to the SCE Windhub Substation and/or Westwind Substation;
- Telecommunication equipment, including underground and overhead fiber optics, and meteorological data collection systems or supervisory control and data acquisition (SCADA);
- Onsite access roads; and
- Perimeter security fencing and nighttime directional lighting.

The components listed above are described in more detail below.

Solar PV Panels

Solar energy would be captured by PV panels, with the single axis tracker solar panels would be aligned in rows in the north south direction or in an east-west direction if a fixed tilt racking system were used instead.

The maximum height of the single axis tracker solar panels would be up to 12 feet above grade at the beginning and end of each day. Each PV panel would be attached to embedded piers using a support structure. Panel layout and spacing is typically optimized to balance energy production versus peak capacity, and depends on the sun angles and shading due to the surrounding horizon of the site. If a tracking system is used, the panels would typically be mounted with the longer side oriented east to west across the tracker system's north-south axis. Individual arrays of panels would be combined to generate the total plant capacity.

Solar Trackers

The project's PV panels would be provided on either a single-axis tracker system or a fixed-mount array system. If using single-axis trackers, the PV panel rows would be oriented in the north-south direction. Single-axis tracking systems would employ a motor mechanism that would allow the arrays to track the path of the sun (from east to west) throughout the day. In the morning, the panels would face the east. Throughout the day, the panels would slowly move to the upright position at noon and on to the west at sundown. The panels would reset to the east in the evening or early morning to receive sunlight at sunrise. The exact tracker manufacturer and model would be determined in the final design. If the fixed tilt racking system is used, the PV panels would be in a fixed tilt position that allows for the most sunlight specific to the geography of the project site. Fixed-tilt structures, would be constructed in east/west rows with the PV panels mounted via angled brackets on top, facing south. The fixed-tilt structures would be supported by vertical posts driven in the ground. The fixed-tilt PV panels would be positioned to receive optimal solar energy over the course of a year, tilted between 15 to 30 degrees. As a fixed-tilt system, the PV panel would not track the path of the sun.

Depending on the type of technology (modules) used, the panels would measure between 4 and 7 feet in length, and the total height of the panel system measured from ground surface would be at most 12 above grade. The length of each row of panels would be approximately 300 feet and spacing between each row would be approximately 8 to 22 feet.

Collection, Inverter, and Transformer Systems

The alternating current/direct current (AC/DC) electrical collection system includes all cables and combiners that collect electricity from the panels, delivers it to the inverters, collects it from the inverters, and ultimately delivers it to the project switching station(s). The collection system would likely be installed along internal access roads to collect power from the rows of panels and deliver it to the switching station. This collection system would likely be installed in subsurface trenches, though in some areas of the site, part or all of the collection system may be housed in above-grade raceways mounted on supports approximately 24 to 36 inches above ground level. The collection system would be rated at between 1,000 to 2,000 volts DC until it reached the inverters and a 34.5 kV AC intermediate voltage system between the inverters and the project switching station. Each of the project's facilities would include inverters, underground and overhead electrical collection systems, and fiber optics. Electrical collection systems would be installed in conjunction with panel arrays within the project site, connecting each solar panel to a feeder circuit; each feeder circuit would in turn be connected to the collector substation. The different solar panel circuits would gather into 34.5 kV circuits and either step-up to 230 kV at the United Street conversion station and/or step-up to 230 kV at the onsite substation. The power would then be delivered via 230 kV circuits to a grid interconnection point at the SCE Windhub Substation and/or Westwind Substation.

The DC electricity produced by the solar panels is converted to three-phase alternating current by a series of inverters. The two facilities would require up to 100 inverters. Alternating current is the type of electricity usable by the electric utility and is the form required to connect to the transmission system. The inverter pad equipment includes a transformer that steps up the electricity in its new form to an output voltage of 34.5 kV. This electricity is then transmitted via the medium voltage collection system to the switching station.

Energy Storage System

Energy storage plays an increasingly important role in renewable energy and helps to create a more flexible and reliable grid system. Energy storage can smooth electricity prices through arbitrage or energy shifting, manage evening energy ramps, mitigate the risk of curtailment, provide black start capability, provide backup power, and more.

The proposed project would install an energy storage facility and associated infrastructure on both the northern and southern sites that would provide the ability to store up to 3GWh energy for the electric grid. Adjacent to the onsite collector substation and/or throughout the solar arrays energy storage systems are proposed. The energy storage batteries would be housed in a structure or within connex boxes. In the event a single structure is constructed near the onsite substation, a maximum height (including any screening for heating, ventilation, and air conditioning (HVAC)) of approximately 30 feet is anticipated. The batteries under this configuration are housed in open-air-style racking (similar to computer racking) 10 to 12 feet high. The associated inverters, transformers, and switchgear would be located immediately adjacent to the structure on concrete pads. The energy storage facility would also have a fire rating in conformance with County standards and specialized fire suppression systems installed for the battery rooms. All nonbattery rooms would have County-approved standard sprinkler systems. The structure would also have HVAC cooling in the battery room to maintain energy efficiency. Power to the HVAC, lighting, etc. would be provided via a connection to the onsite substation service transformer with connection lines installed aboveground and/or belowground. The energy storage facility would be unmanned, with remote operational control and periodic inspections and maintenance performed as necessary. The energy storage technology has not been determined at this time, but could include any commercially available battery technology, including but not limited to lithium iron, lead acid, sodium sulfur, and sodium or nickel hydride. Power stored by the energy storage facility would be gathered into 34.5 kV circuits and either step-up to 230 kV at the United Street conversion station and/or step-up to 230 kV at the onsite substation. The power would then be delivered via 230 kV circuits to a grid interconnection point at the SCE Windhub Substation and/or Westwind Substation.

Substations

The solar facility would include an onsite substation, located on the northwest portion of the northern site. Substation generation voltage would step up from 34.5 kV to 230 kV for off-site transmission. The substation would contain a control building with an attached battery room and standard substation equipment. The substation would not exceed three 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 height (transmission tower plus 15 feet). Per Section 19.08.160 of the Kern County Zoning Ordinance, any tower over 80 feet in height would require military review.

Grounding of the substation would be accomplished by ground grids designed to meet the requirements of the Institute of Electrical and Electronics Engineers (IEEE) Guide for Safety in AC Substation Grounding.

Final ground grid design would be based on site-specific information such as available fault current and local soil resistivity. Typical ground grids consist of direct buried copper conductors with eight-foot-long copper-clad ground rods arranged in a grid pattern to approximately 3 feet outside of the substation area.

Operation and Maintenance Facilities

The O&M building would be up to approximately 8,000 square feet and is expected to be co-located with the proposed collector substation. It is anticipated that a maximum of six permanent staff employees would use the O&M building for ongoing facility monitoring, equipment storage, and repairs. The O&M building is expected to be a prefabricated commercial structure that measures up to 100 feet by 80 feet in area and 12 feet high. Permanent restroom facilities with septic tanks and/or portable toilets would be used for sanitary purposes at the O&M building, and a permanent water source in the form of trucked water, well water, or bottled water would be provided for the staff. The proposed building would include the requisite number of parking spaces for staff members' vehicles and O&M equipment. The parking area would measure approximately 10,000 square feet. Power for the O&M buildings and the project's associated structures would be provided by the project's electrical generation or supplied by the local power provider.

The O&M facility would include approved hazardous waste storage and associated containment for oils and fuels, as required. Other hazardous chemicals that may be employed on site may include cleaning agents for the O&M building and other such chemicals that would be standard at a commercial site. Typical O&M activities that would occur during operation include but are not limited to liaison and remote monitoring; administration and reporting; semi-annual and annual services; remote operations of inverters; site security and management; additional communication protocol; repair and maintenance of solar facilities, battery facilities, substations, electrical transmission lines, and other project facilities; and periodic panel washing.

Onsite Meteorological Stations

The project would include multiple onsite solar meteorological stations located near the O&M building and throughout the array which would consist of solar energy (irradiance) meters, as well as an air temperature sensor and wind anemometer. This equipment, specifically the wind anemometer, would have an estimated height of approximately 8 feet. The precise location of the meteorological stations would be determined during detailed design engineering. Power for the meteorological stations would be provided by the plant auxiliary power system or a dedicated PV module with a small battery.

Site Access and Security

During operation, the project would be accessed from various roadways. SR-58 intersects with SR-14 and runs west of the project site; both the SR-58 and SR-14 provide primary access. The northern solar facility would be accessed by Lone Butte Road or 10th Street from SR 58. The southern solar facility would be accessed by Silver Queen Road or Reed Avenue from United Street off SR 14. While existing roads would be utilized to the greatest extent possible, potential improvements to unpaved roads (such as evening out the road topography or compacting the dirt) may be required off site to serve as access roads from the existing road network to the project. As depicted the project's Site Plans Figures 3-3 through 3-4, new unpaved roads within the project site would be constructed. A 20-foot-wide minimum road is required around the perimeter of the solar arrays for the fire department and emergency vehicles. Additional internal maintenance roads would be located throughout the project area. Spacing between each row would depend

on final panel type, orientation, and Caltrans/County regulations. These site access roads would remain in place for ongoing operations and maintenance activities after construction is completed.

Final service road alignments would depend on the final placement of the solar panels and on the results of field investigations, including topography and any other site-specific details to be incorporated into the final design. Should access roads be required to cross streambed areas under the jurisdiction of the California Department of Fish and Wildlife, appropriate crossings would be installed to minimize impacts to these jurisdictional areas and comply with all California Fish and Game Code requirements, including authorization through a Streambed Alteration Agreement as appropriate.

Security fencing would be installed in accordance with Kern County zoning requirements. Based on current Kern County ordinances, the project applicant has the option to fence either the exterior northern and southern boundaries of the entire project site, each solar panel row independently, or a grouping of solar blocks. At this time, the project proponent proposes to install a 6-foot- to 8-foot-high chain-link security fence around the perimeter of the facility to help prevent access by the public; the fence may include barbed wire as an additional security measure. The fencing would remain for the life of the project.

The project's lighting system would provide O&M personnel with illumination for both normal and emergency conditions. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Permanent motion-sensitive, directional security lights would be installed to provide adequate illumination around the substation areas and points of ingress/egress. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties in conformance with Kern County Ordinance (Chapter 19.81) - Outdoor Lighting-Dark Skies requirements.

Motion-sensitive cameras would also be installed throughout each solar facility at the inverters for added security. The cameras would be mounted on poles of approximately 20 feet in height.

Electrical Interconnection to Transmission Owner Infrastructure

The proposed project would connect with existing SCE electrical distribution lines from SCE's circuit on the western border of the project boundary to a pole and pole-top mounted breaker onsite.

1.6 Environmental Impacts

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

1.6.1 Impacts Not Further Considered in this EIR

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

- Population and Housing
- Recreation

1.6.2 Impacts of the Project

Sections 4.1 through 4.18 in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, provide a detailed discussion of the environmental setting, impacts associated with the project, and mitigation measures designed to reduce significant impacts to less than significant levels, when feasible. The impacts, mitigation measures, and residual impacts for the project are summarized in **Table 1-6, Summary of Impacts, Mitigation Measures, and Levels of Significance**, located at the end of this chapter, and are discussed further below.

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

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

1.6.3 Less-than-Significant Impacts

Table 1-2, Summary of Project Impacts that are Less than Significant or Less than Significant with Mitigation, presents those impacts of the project that were determined to be less than significant by themselves, or less than significant with implementation of mitigation measures. Less than significant cumulative impacts are also included in this table. Sections 4.1 through 4.18 of this EIR present detailed analysis of these impacts and describe the means by which the mitigation measures listed in Table 1-2 would reduce impacts to a less than significant-level.

TABLE 1-2: SUMMARY OF PROJECT IMPACTS THAT ARE LESS THAN SIGNIFICANT OR LESS THAN SIGNIFICANT WITH MITIGATION

Impact	Mitigation Measures
Agriculture and Forest Resources (Project and Cumulative)	No mitigation required
Biological Resources (Project)	MM 4.4-1 through MM 4.4-14; MM 4.1-5
Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-5
Energy (Project and Cumulative)	MM 4.3-1
Geology and Soils (Project and Cumulative)	MM 4.7-1 through MM 4.7-7
Greenhouse Gas Emissions (Project and Cumulative)	No mitigation required
Hazards and Hazardous Materials (Project and Cumulative)	MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.14-1, MM 4.15-1, MM 4.17-1
Hydrology and Water Quality (Project and Cumulative)	MM 4.10-1, MM 4.7-3, MM 4.9-1
Land Use and Planning (Project and Cumulative)	MM 4.11-1 and MM 4.11-2
Mineral Resources (Project and Cumulative)	No mitigation required
Public Services (Project and Cumulative)	MM 4.14-1 and MM 4.14-2
Traffic and Transportation (Project and Cumulative)	MM 4.15-1
Tribal Cultural Resources (Project and Cumulative)	No mitigation required
Utilities and Service Systems (Project and Cumulative)	MM 4.17-1, MM 4.7-3, MM 4.10-1
Wildfire (Project)	MM 4.14-1, MM 4.10-1

1.6.4 Significant and Unavoidable Impacts

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

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

- Aesthetics (project and cumulative)
- Air Quality (temporary project and cumulative)
- Biological Resources (cumulative only)
- Noise (temporary project only)
- Wildfire (cumulative only)

Table 1-3, *Summary of Significant and Unavoidable Project-Level and Cumulative Impacts of the Solar Facility*, presents those impacts at the project level and cumulatively. Sections 4.1, 4.3, 4.4, and 4.18 of this EIR present detailed analyses of these impacts and describe the means by which the mitigation measures listed in Table 1-3 would reduce the severity of impacts to the extent feasible.

TABLE 1-3: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE PROJECT-LEVEL AND CUMULATIVE IMPACTS OF THE SOLAR FACILITY

Resources	Project Impacts	Cumulative Impacts	Mitigation Measures
Aesthetics	Implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. Mitigation Measures MM 4.1-1 through MM 4.1-4 would be incorporated to reduce visual impacts that would occur from the collection of debris along the site boundary and would limit vegetation removal and would plant native vegetation. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped desert landscape character of the project site, impacts to visual resources would remain significant and unavoidable .	<p>The project would have cumulatively significant and unavoidable aesthetic impacts related to visual character after implementation of mitigation. Although implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7 would reduce the adverse visual changes experienced at individual viewpoints, there are no mitigation measures that would allow for the preservation of the existing visual character of the area. The conversion of approximately 2,006 acres of privately owned land to a solar energy production facility is considered a significant and unavoidable cumulative impact.</p> <p>As it relates to impacts associated with light and glare, the project would implement mitigation measures that would reduce the project's impacts. However, given the number of proposed cumulative projects directly adjacent to and within proximity of the project and the conversion of thousands of acres of land in a presently rural area, even with implementation of mitigation, the project and cumulative projects combined would result in significant and unavoidable cumulative impacts related to light and glare.</p>	MM 4.1-1 through MM 4.1-7

TABLE 1-3: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE PROJECT-LEVEL AND CUMULATIVE IMPACTS OF THE SOLAR FACILITY

Resources	Project Impacts	Cumulative Impacts	Mitigation Measures
Air Quality	It is anticipated that there would be times during the project's construction and decommissioning activities that would result in significant temporary levels of NO _x and PM ₁₀ emissions that would conflict with regulations or delay the attainment of applicable EKAPCD standards and expose sensitive receptors to substantial pollutant concentrations, even with adherence to EKAPCD's Ozone Attainment Plan and implementation of mitigation measures. The project would result in perceptible temporary levels of PM ₁₀ and PM _{2.5} emissions during construction and decommissioning, even with the incorporation of Mitigation Measures MM 4.3-1 through MM 4.3-4, these temporary impacts would be considered significant and unavoidable .	There are several alternative energy (wind and solar) projects being developed within the Eastern Kern geographical area. From a site specific project level operational review, these projects are required to comply with all rules and regulations of the Eastern Kern Air Pollution Control District. Impacts associated with operation of the proposed facilities are generally considered less than significant. However, given the total number of development proposals within the region, along with the temporary levels of PM emissions generated during construction and decommissioning activities, even with the implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4, cumulative temporary construction and decommissioning impacts are considered significant and unavoidable .	MM 4.3-1 through MM 4.3-4
Biological Resources	There would be no significant and unavoidable project impacts.	As development increases within Kern County, impacts to biological resources within the region are increasing on a cumulative level. When considered with the number of present and reasonably foreseeable future development projects in the Antelope Valley, the project would result in a significant and unavoidable cumulative loss of foraging and nesting habitat for special-status species, even with the implementation of project-specific Mitigation Measures MM 4.1-5 and MM 4.4-1 through MM 4.4-14. The loss of such foraging and nesting habitat for special-status species that may utilize habitat on the project site would result in a significant and unavoidable cumulative impact.	MM 4.1-5, MM 4.4-1 through MM 4.4-14

TABLE 1-3: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE PROJECT-LEVEL AND CUMULATIVE IMPACTS OF THE SOLAR FACILITY

Resources	Project Impacts	Cumulative Impacts	Mitigation Measures
Noise	It is anticipated that there would be times during the project's construction and decommissioning activities would generate noise greater than the standard 65dB(a) for the Kern County General Plan and 55 dB(A) for short period of times. Implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3 would reduce impacts to the extent feasible during construction activities. However, despite the implementation of mitigation, construction activities could generate noise greater than the standard for the Kern County General Plan and for short period of times, resulting in temporary construction impacts that would be considered significant and unavoidable . Given the fact that construction activities could generate noise greater than the standard 65dB(a) for the Kern County General Plan and 55 dB(A) for short period of times, temporary construction impacts are considered significant and unavoidable . Decommissioning activity noise levels could result in disturbances of noise sensitive receptors in the project vicinity similar to those during the loudest construction phases, if activities are not restricted to daytime hours. Thus, similar to construction, impacts during decommissioning of the project are considered significant and unavoidable .	There would be no significant and unavoidable cumulative impacts.	MM 4.13-1 through MM 4.13-3
Wildfire	There would be no significant and unavoidable project impacts.	Despite implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1, given the location in a rural area, the project and related projects have the potential to result in a cumulative impact related to the installation or maintenance of associated infrastructure and, thus, would result in a significant and unavoidable cumulative impact.	

1.6.5 Irreversible Impacts

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

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

1.6.6 Growth Inducement

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

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

Growth inducement can be a result of new development that requires an increase in employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the project would not induce substantial growth. There would be six permanent employees at the O&M building during operations. It is anticipated that the construction workforce would commute to the sites each day from local communities, and the majority would likely come from the existing labor pool as construction workers travel from site to site as needed. Construction staff not drawn from the local labor pool would stay in any of the local hotels in local communities.

Although the project would contribute to the energy supply, which supports growth, the development of power infrastructure is a response to increased market demand. It does not induce new growth. Kern County planning documents already permit and anticipate a certain level of growth in the area of the project and in the State as a whole, along with attendant growth in energy demand. It is this anticipated growth that drives energy-production projects, not vice versa. The project would supply energy to accommodate and support existing demand and projected growth, but it would not foster any new growth. Therefore, any link between the project and growth in Kern County would be speculative.

In *Kerncrest Audubon Society v. Los Angeles Department of Water and Power*, the analysis of growth-inducing effects contained in the EIR for the Pine Tree Wind Development Project was challenged. Plaintiffs argued that the discussion was too cursory to provide adequate information about how additional electricity generated by the project would sustain further growth in the Los Angeles area. The court held that the additional electricity that the project would produce was intended to meet the current forecast of

growth in the Los Angeles area. As such, the wind development project would not cause growth, and so it was not reasonable to require a detailed analysis of growth-inducing impacts. In addition, EIRs for similar energy projects have contained similarly detailed analyses of growth-inducing impacts. Their conclusions that increasing the energy supply would not create growth has been upheld, because: (1) the additional energy would be used to ease the burdens of meeting existing energy demands within and beyond the area of the project; (2) the energy would be used to support already-projected growth; or (3) the factors affecting growth are so multifarious that any potential connection between additional energy production and growth would necessarily be too speculative and tenuous to merit extensive analysis. Thus, as has been upheld in the courts, this level of analysis provided in this EIR is adequate to inform the public and decision makers of the growth-inducing impacts of the project.

1.7 Alternatives to the Project

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

1.7.1 Alternatives Considered and Rejected

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

Wind Energy Project Alternative

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

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

In addition, energy production from wind power would not require the significant water usage associated with coal, nuclear, and combined-cycle sources. Turbines used in wind farms for commercial production of electric power are usually three-bladed units that are pointed into the wind by computer-controlled

motors. The wind farm would consist of a group of wind turbines placed where electrical power is produced. The individual turbines would be interconnected with a medium-voltage power collection system and a communications network. At a substation, the medium-voltage electrical current would be increased through a transformer before connection to the high-voltage transmission system. Compared with traditional energy sources, the environmental effects of wind power are relatively minor. However, wind farms would not decrease short-term construction-related air emissions. Wind turbines would also have the potential to affect avian species in the local area. In addition, in order for wind turbines to produce an equivalent 300 MW of power that the project would produce, the alternative would require more space than what the project site current accommodates. Consequently, the project site would need to be expanded.

As noted above, some of the project's objectives are to assist California in meeting its GHG emission reduction goals through establishing solar PV power-generating facilities to produce reliable electricity in an economically feasible and commercially financeable while minimizing environmental impacts and using proven and established PV technology that is efficient, requires low maintenance and is recyclable. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would substantially increase the significant aesthetic impacts associated with the project because wind turbines would be much taller than solar panels, require FAA lighting and are more visible from many viewpoints.
- It may conflict with the Mojave Air and Space Port, Kern County Airport Land Use Compatibility Plan and potentially the Edwards Air Force Base due to the heights of the turbines.
- It may result in additional/greater biological resources impacts to avian species than the project.
- It may generate long-term noise impacts to nearby sensitive receptors from rotating turbine blades.

Industrial Power Plant Alternative

This alternative would involve the development of a natural gas-fired power plant or plants (equivalent to 300 MW) in Kern County. Fossil fuel-powered plants are designed on a large scale for continuous operation. However, byproducts of industrial power plant operation need to be considered in both design and operation. When waste heat that results from the finite efficiency of the power cycle is not recovered and used as steam or hot water, it must be released to the atmosphere, and often uses a cooling tower as a cooling medium (especially for condensing steam). The flue gas from combustion of the fossil fuels is discharged to the air and contains carbon dioxide and water vapor as well as other substances, such as nitrogen, nitrogen oxides, and sulfur oxides. Furthermore, unlike the project, fossil fuel-powered plants are major emitters of GHGs. In addition, industrial power plants generally involve the construction of large structures, such as cooling towers and gas stacks, as well as a large number of employees to operate the facility on a 24/7 basis 365 days a year. Accordingly, the development of an industrial power plant would typically result in greater adverse impacts related to: (1) aesthetics and the local visual setting of the project area; (2) air quality and GHG emissions; (3) land use and planning conflicts with the rural development of the surrounding area; (4) noise from the plant operations; (5) traffic from increased employment at the facility; and (6) demand on public utilities, including water and waste disposal.

As noted above, some of the project's objectives are to assist California in meeting its GHG emission reduction goals through establishing solar PV power-generating facilities to produce reliable electricity in an economically feasible and commercially financeable while minimizing environmental impacts and using

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

- It would result in additional/greater impacts than the project including aesthetics, air quality, GHG emissions, land use and planning, noise, transportation, and public utilities, including water use and disposal.
- Depending on siting, it may also result in greater biological resources impacts than the project.
- It may conflict with the Mojave Air and Space Port, Kern County Airport Land Use Compatibility Plan and potentially the Edwards Air Force Base due to the heights of the cooling towers and smoke stacks.
- It would not contribute to the statewide renewable energy and GHG reduction objectives as this alternative would use non-renewable energy to produce electricity.

Alternative Site

This alternative would involve the development of the project on another site located within Kern County, other than constructing rooftop distributed generation systems. Although undetermined at this time, the alternative project site would likely be located in western Antelope Valley, similar to the project. This alternative is assumed to involve construction of a 300 MW PV solar facility with up to 3 GWh of energy storage on a site totaling 2,006 acres. CEQA *Guidelines* 15126.6(f)(2)(a) states that the key and initial step in considering an alternative site is whether “any of the significant effects of the project would be avoided or substantially lessened” in relocating the project, while remaining consistent with the same basic objectives of the project.

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

In addition, alternative sites for the project are not considered to be “potentially feasible,” as there are no suitable sites within the control of the project proponent that would reduce project impacts. The potential amount of available, similar sites is further reduced because unlike the project, alternative sites may not include sites with close proximity to transmission infrastructure. Therefore, this alternative was eliminated because it would not avoid or substantially reduce the significant environmental effects of the project.

1.7.2 Alternatives Selected for Analysis

The following alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project, but which may avoid or

substantially lessen any of the significant impacts of the project. The following alternatives are analyzed in detail in this chapter of the EIR:

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

Table 1-4, *Summary of Development Alternatives*, on the following page provides a summary of the relative impacts and feasibility of each alternative and **Table 1-5**, *Comparison of Alternatives*, provides a summary side-by-side comparison of the potential impacts of the alternatives and the project. A complete discussion of each alternative is provided below.

TABLE 1-4: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Project	Construction and operation of a solar facility on approximately 2,006 acres would generate up to 300 MW of electricity and 3 GWh of energy storage with a 230 kV gen-tie at the United Street conversion station and/or at the onsite substation. The power would then be delivered via 230 kV circuits to a grid interconnection point at the SCE Windhub Substation and/or Westwind Substation. Approval of three zones changes and three CUPs for construction and operation of, and an Amendment to the Mojave Specific Plan Circulation Element would be required.	N/A
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	<ul style="list-style-type: none"> • Required by CEQA • Avoids need for zone changes and CUPs • Avoids all significant and unavoidable impacts • Greater impacts to GHGs • Similar impacts to tribal cultural resources • Less impact in all remaining environmental issue areas • Does not meet any of the project objectives
Alternative 2: General Plan/Specific Plan and Zoning Build-Out Alternative	Project site would be developed to the maximum intensity allowed under the Kern County General Plan land use designations and zoning classifications and other existing applicable restrictions.	<ul style="list-style-type: none"> • Avoids need for zone changes and CUPs • Similar impacts to agriculture and forestry resources, mineral resources, tribal cultural resources, and wildfires • Less impact to aesthetics, hazards and hazardous materials, and land use and planning

TABLE 1-4: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative 3: Reduced Acreage Alternative	Construction and operation of one solar facility on approximately 1,041 acres. This alternative is still expected to contain enough land to construct a solar array field capable of generating approximately 155 MW, with up to 3 GWh of energy storage. The project site would require a zone change, CUP approval, and an Amendment to the Mojave Specific Plan Circulation Element.	<ul style="list-style-type: none"> • Greater overall impacts in all remaining environmental issue areas • Similar impacts to hazards and hazardous materials, land use and planning, mineral resources, public services, and tribal cultural resources • Greater overall impacts to GHG • Less impact in all remaining environmental issue areas • Does not meet all the project objectives
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 300 MW of PV solar distributed on rooftops throughout western Antelope Valley. Electricity generated would be for onsite use only.	<ul style="list-style-type: none"> • Avoids need for zone change, Specific Plan Amendment to the Circulation Element, and CUP at the project site but may require other entitlements (such as a CUP or variance) on other sites • Avoid significant and unavoidable impacts associated with aesthetics, air quality, biological resources, noise, and wildfire • Greater impacts to GHG emissions and land use and planning • Similar impacts to energy and tribal cultural resources • Less impact in all remaining issue areas • Does not meet the project objectives nor does this alternative account for the energy storage component of the project

TABLE 1-5: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: General Plan/Specific Plan and Zoning Build- Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and unavoidable (project and cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agriculture and Forestry Resources	Less than significant	Less (NI)	Similar (LTS)	Less (LTS)	Less (NI)
Air Quality	Significant and unavoidable – construction (project and cumulative)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Biological Resources	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Cultural Resources	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Energy	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Similar (LTS)
Geology and Soils	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Greenhouse Gas Emissions	Less than significant	Greater (LTS)	Greater (LTS)	Greater (LTS)	Greater (LTS)
Hazards and Hazardous Materials	Less than significant with mitigation	Less (NI)	Less (LTS)	Similar (LTS)	Less (LTS)
Hydrology and Water Quality	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Land Use and Planning	Less than significant with mitigation	Less (NI)	Less (NI)	Similar (LTS)	Greater (LTS)

TABLE 1-5: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: General Plan/Specific Plan and Zoning Build- Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Mineral Resources	Less than significant	Less (NI)	Similar (LTS)	Similar (LTS)	Less (LTS)
Noise	Significant and unavoidable - construction (project)	Less (NI)	Greater (SU)	Similar (SU)	Less (SU)
Public Services	Less than significant with mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Transportation	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Tribal Cultural Resources	No impact	Similar (NI)	Similar (NI)	Similar (NI)	Similar (NI)
Utilities and Service Systems	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Wildfires	Significant and unavoidable (cumulative only)	Less (NI)	Similar (SU)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	Some	None	Some
NI = No Impact LTS = Less Than significant SU = Significant and Unavoidable					

Alternative 1: No-Project Alternative

The CEQA *Guidelines* require EIRs to include a No Project Alternative for the purpose of allowing decision makers to compare the effects of approving the project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the (up to) 300 MW solar PV facility with up to 3 GWh of energy storage on the 2,006-acre site would not occur. The No Project Alternative would not require three CUPs for construction and operation of the proposed solar and energy storage project. An amendment to the Mojave Specific Plan Circulation Element would not be required. The No Project Alternative would maintain the current zoning, land use classifications, and existing land uses, which consist mostly of undeveloped desert vegetation. No physical changes would be made to the project site.

Alternative 2: General Plan/Specific Plan Build-Out Alternative

Alternative 2, the General Plan/Specific Plan and Zoning Build-Out Alternative, would develop the project site to the maximum intensity allowed under the existing Kern County General Plan land use and zoning classifications. According to the Kern County General Plan, the 4.1 (Accepted County Plan Areas) land use designation applies to areas where specific land use plans have already been prepared and approved. In the case of the project site, the project is within the boundaries of both the Mojave Specific Plan and West Edwards Road Settlement Specific Plan. The portion of the project site within the Mojave Specific Plan is designated as Map Codes 8.5 (Resource Management - Minimum 20 Acre Size). The portion of the project site within the West Edwards Road Settlement Specific Plan is designated as Map Code 8.5 (Resource Management - Minimum 20 Acre Size) and 8.5/2.4 (Resource Management - Minimum 20 Acre Size/Steep Slope).

The project site has various zone classifications which include: A (Exclusive Agriculture), A-1 (Limited Agriculture), and A-1 H (Limited Agriculture - Airport Approach Height Combining), and A-1 FPS (Limited Agriculture – Floodplain Secondary Combining). No solar facilities would be developed under this alternative and, therefore, no zone changes for solar facility construction and operation would be required for this alternative. The project site would be developed in accordance with the existing agricultural zone designations.

Implementation of Alternative 2 would consist of developing the project site under the current land use classification of 4.1 (Mojave Specific Plan and West Edwards Road Settlement Specific Plan), 8.5 (Resource Management – Minimum 20 Acre Size) and 8.5/2.4 (Resource Management - Minimum 20 Acre Size/Steep Slope). The 8.5 (Resource Management, 20-acre minimum) land use designation applies primarily to open space lands containing important resources, such as wildlife habitat, scenic values, or watershed recharge areas. Typical uses include livestock grazing, farming and ranching, nature preserves, water storage and groundwater recharge areas, irrigated croplands, and open space and recreation. The minimum allowable parcel size in the 8.5 (Resource Management, 20-acre minimum) land use designation is 20 acres gross, except lands subject to a Williamson Act Contract/Farmland Security Zone Contract, in which case the minimum parcel size is 80 gross acres. The 2.4 classification pertains to land with an average slope of 30 percent or steeper.

Alternative 3: Reduced Acreage Alternative

Under Alternative 3, the Reduced Acreage Alternative, the northern site of the project site would be developed with a solar facility and associated infrastructure with the capacity to generate up to 155 MW of renewable electric energy. Under this alternative, the southern site would not be developed for solar energy production and would remain undeveloped. The two options for gen-tie interconnection would remain unchanged. Development of the northern site would include an operations and maintenance (O&M) facility, installation of an energy storage facility and associated infrastructure, and an onsite substation that would be located in the northwest portion of the northern site, as under the project. Eliminating development of the southern site from the project would reduce the project's total generation capacity from 300 MW to 155 MW, and reduce the developed area from approximately 2,006 acres to 1,041 acres. Similar to the project, this alternative would require zone changes and CUPs for construction and operation of a commercial solar electrical generating facility, as well as the amendment to the Mojave Specific Plan Circulation Element to allow for the removal of the future road reservation along Purdy Avenue from United Street to Fifth Street.

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

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative, would involve the development of a number of geographically distributed small to medium solar PV systems (100 kWh kilowatt hours to 1 MW) within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout western Antelope Valley. Under this alternative, no new land would be developed or altered. However, depending on the type of solar modules installed and the type of tracking equipment used (if any), a similar or greater amount of acreage (i.e., greater than 2,006 acres of total rooftop area) may be required to attain project's capacity of 300 MW of solar PV generating capacity. Because of space or capital cost constraints, many rooftop solar PV systems would be fixed-axis systems or would not include the same type of sun-tracking equipment that would be installed in a freestanding utility-scale solar PV project and, therefore, would not attain the same level of efficiency with respect to solar PV generation. Alternative 4 would generate 300 MW of electricity, but it would be for onsite use only. This alternative assumes that rooftop development would occur primarily on commercial and industrial structures due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed onsite by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities.

1.7.3 Environmentally Superior Alternative

There are a number of factors in selecting the environmentally superior alternative. An EIR must identify the environmentally superior alternative to the project. Alternative 1, the No Project Alternative, would be environmentally superior to the project on the basis of its minimization or avoidance of physical environmental impacts. However, CEQA *Guidelines* Section 15126.6(e)(2) states:

“The “no project” analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to

occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.”

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Environmentally Superior Alternative is considered to be the No Ground-Mounted Utility-Solar Development Alternative. This alternative would avoid significant and unavoidable impacts to aesthetics, air quality, biological resources, and noise. Impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology or up to 3GWh of energy storage. This alternative could potentially result in greater impacts to land use and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, this alternative would result in less impact to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, public services, transportation, and utilities and service systems. Thus, for most environmental issue areas, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the project.

It is important to note that it is considered to be impracticable and infeasible to construct the No Ground-Mounted Utility-Solar Development Alternative within the same timeframe and/or with the same efficiency as the project because the project proponent lacks control and access to the sites required to develop 300 MW of distributed solar generated electricity and the required land to support up to 3GWh of energy storage. In addition, this alternative would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California’s RPS Program. Nonetheless, because this alternative reduces impacts to a greater degree than the General Plan and Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

1.8 Areas of Controversy

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

- Impacts related to aesthetics (glare)
- Impacts to biological resources
- Impacts to cultural resources (archaeological resources)
- Impacts to hazards and hazardous materials
- Impacts to hydrology and water quality
- Impacts to land use (land use compatibility)
- Impacts related to traffic
- Cumulative impacts

1.9 Issues to Be Resolved

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

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

1.10 Summary of Environmental Impacts and Mitigation Measures

Table 1-6 summarizes the environmental impacts of the project, mitigation measures, and unavoidable significant impacts identified and analyzed in Chapters 4.1 through 4.18 of this EIR. Refer to the appropriate EIR section for additional information.

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

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

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>all trash receptacles during operation of the project shall be shown on final plans.</p> <p>d. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.</p> <p>MM 4.1-2: The project proponent shall install metal fence slats or similar view-screening materials, as approved by the Kern County Planning and Natural Resources Department, in all on-site perimeter fencing for any portion of the solar site that is adjacent to parcels zoned for residential use, including E (Estate Residential), R-1 (Low-Density Residential), R-2 (Medium-Density Residential), R-3 (High-Density Residential), or PL (Platted Lands) zoning unless the adjacent property is owned by the project proponent (to be verified by the Kern County Planning and Natural Resources Department) or a public or private agency that has submitted correspondence to the Kern County Planning and Natural Resources Department requesting this requirement to be waived. Should the project proponent sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale.</p> <p>MM 4.1-3: Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan, for review and approval by the Kern County Planning and Natural Resources Department, that will ensure all project facilities including operations and maintenance buildings, gen-tie poles, array facilities, etc. blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.</p> <p>MM 4.1-4: Wherever possible, within the proposed project boundary, the natural vegetation shall remain</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place as permitted by Fire Code. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department for review and approval. The plan shall include the measures detailed below.</p> <p>a) In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) and/or allowed to re-vegetate with the existing native seed bank in the top soil where possible to establish revegetation. Areas that contain permanent features such as perimeter roads, maintenance roads or under arrays do not require revegetation.</p> <p>b) The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, (4) a list of the consultation efforts completed, (5) the methods and schedule for installation of fencing that complies with wildlife agency regulations, and a clear prohibition of the use of toxic rodenticides.</p> <p>c) Ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish re-vegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Natural Resources Department prior to planting. Phased seeding may be used if a phased construction approach is used (i.e., the entire site need not be seeded all at the same time).</p> <p>d) Vegetation/ground cover shall be continuously maintained on the site by the project operator.</p> <p>e) The re-vegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during these three-year periods, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for the three-year period. Should efforts to revegetate with the existing native seed bank in the top soil prove in the second year to not be successful by 75 percent cover rate, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department and an additional year shall be added to the monitoring program to ensure coverage is achieved. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.1-4: The project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.	Potentially significant	<p>MM 4.1-5: Prior to final activation of the solar facility, the project proponent shall demonstrate to Kern County Planning and Natural Resources Staff that the project site complies with the applicable provisions of the Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance), and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.</p> <p>MM 4.1-6: Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department.</p> <p>MM 4.1-7: Prior to final activation of the solar facility, the project operator shall demonstrate that all on-site buildings utilized non-reflective materials, as approved by the Kern County Planning and Natural Resources Department.</p>	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.1: Cumulative Impacts	Significant and unavoidable (Visual Character) Potentially significant (Scenic Resource; Light and Glare)	Implementation Mitigation Measures MM 4.1-1 through MM 4.1-7 is required.	Significant and unavoidable (Visual Character) Less than significant (Scenic Resource; Light and Glare)
4.2 Agriculture and Forestry Resources			
Impact 4.2-1: The project would Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.2-2: The project would conflict with existing zoning for agricultural use or Williamson Act Contract.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.2-3: The project would conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104 (g)).	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.2-4: The project would result in the loss of forestland or conversion of forest land to non-forest use.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.2-5: The project would involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.	Less than significant	No mitigation measures are required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.2-6: The project would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15206(b)(3) Public Resources Code.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.2: Cumulative Impacts	No impact	No mitigation measures are required.	No impact
4.3 Air Quality			
Impact 4.3-1: The project would conflict with or obstruct implementation of the applicable air quality plan.	Significant and unavoidable (Construction and Decommissioning) Potentially significant (Operation)	MM 4.3-1: Implement Diesel Emission-Reduction Measures During Construction. To control PM emissions during construction, the project proponent/operator and/or its contractor(s) shall implement the following measures during construction of the project, subject to verification by the County: <ul style="list-style-type: none"> a. Off-road equipment engines over 25 horsepower shall be equipped with EPA Tier 3 or higher engines, unless Tier 3 construction equipment is not locally available. b. All equipment shall be maintained in accordance with the manufacturer's specifications. c. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes. d. Notification shall be provided to trucks and vehicles in loading or unloading queues that their engines shall be turned off when not in use for more than 5 minutes. e. Electric equipment shall be used to the extent feasible in lieu of diesel or gasoline-powered equipment. f. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOX emissions. 	Significant and unavoidable (Construction and Decommissioning) Less than significant (Operation)

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> g. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines. h. Existing electric power sources shall be used to the extent feasible. This measure would minimize the use of higher polluting gas or diesel generators. i. The hours of operation of heavy-duty equipment and/or the quantity of equipment in use shall be limited to the extent feasible. <p>MM 4.3-2: Implement Fugitive Dust Control Plan During Construction. To control fugitive PM emissions during construction, prior to the issuance of grading or building permits and any earthwork activities, the project proponent shall prepare a comprehensive Fugitive Dust Control Plan for review by the Kern County Planning and Natural Resources Department. The plan shall include all EKAPCD-recommended measures, including but not limited to, the following:</p> <ul style="list-style-type: none"> a. All soil being actively excavated or graded shall be sufficiently water to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soils areas. Watering shall take place a minimum of three times daily where soil is being actively disturbed, unless dust is otherwise controlled by rainfall or use of a dust suppressant. b. Vehicle speed for all on site (i.e., within the project boundary) construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads. c. Vehicle speeds on all offsite unpaved roads (i.e., outside the project boundary) construction vehicles shall not exceed 25 mph. Signs identifying vehicle 	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>speed limits shall be posted along unpaved site access roads and at the site entrance/exit.</p> <p>d. All onsite unpaved roads and offsite unpaved public project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20 percent opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g., worker commute periods, truck convoys). Reclaimed (non-potable) water shall be used to the extent available and feasible.</p> <p>e. The amount of the disturbed area (e.g., grading, excavation) shall be reduced and/or phased where possible.</p> <p>f. All disturbed areas shall be sufficiently watered or stabilized by EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20 percent opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available and feasible.</p> <p>g. All clearing, grading, earth moving, and excavation activities shall cease during periods when dust plumes of 20 percent or greater opacity affect public roads or nearby occupied structures.</p> <p>h. All disturbed areas anticipated to be inactive for periods of 30 days or more shall be treated to minimize</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips.</p> <ul style="list-style-type: none"> i. All active and inactive disturbed surface areas shall be compacted, where feasible. j. Equipment and vehicle access to disturbed areas shall be limited to only those vehicles necessary to complete the construction activities. k. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil-disturbing activities. l. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20 percent opacity. If necessary and where feasible, three-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust. m. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust. n. Where acceptable to the fire department and feasible, weed control shall be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering. o. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least 2 feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114. 	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>p. Gravel pads, grizzly strips, or other material track-out control methods approved for use by EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways.</p> <p>q. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or rocks/grates at the project entry points shall be used, when necessary, to remove soil deposits and minimize the track-out/deposition of soil onto nearby paved roadways.</p> <p>r. During construction paved road surfaces adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available.</p> <p>s. Portable equipment, 50 horsepower or greater, used during construction activities (e.g., portable generators, temporary concrete batch plant) shall require California statewide portable equipment registration (issued by CARB) or an EKAPCD permit.</p> <p>t. The Fugitive Dust Control Plan shall identify a designated person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures, as necessary, to minimize the transport of dust off site and to ensure compliance with identified fugitive dust control measures. Contact information for a hotline shall be posted on site any should any complaints or concerns be received during working hours and holidays and weekend periods when work may not be in progress. The names and telephone numbers of such persons shall be provided to the EKAPCD Compliance Division prior to the start of any grading or earthwork.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> u. Signs shall be posted at the project site entrance and written notifications shall be provided a minimum of 30 days prior to initiation of project construction to residential land uses located within 1,000 feet of the project site. The signs and written notifications shall include the following information: (a) Project Name; (b) Anticipated Construction Schedule(s); and (c) Telephone Number(s) for designated construction activity monitor(s) or, if established, a complaint hotline. v. The designated construction monitor shall document and immediately notify EKAPCD of any air quality complaints received. If necessary, the project operator and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints. 	
Impact 4.3-2: The project would expose sensitive receptors to substantial pollutant concentrations.	Significant and unavoidable (Criteria Air Pollutants) Potentially significant (Valley Fever)	<p>Implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 is required.</p> <p>MM 4.3-3: Minimize Exposure to Potential Valley Fever–Containing Dust. To minimize personnel and public exposure to potential Valley Fever–containing dust on and off site, the following control measures shall be implemented during project construction:</p> <ul style="list-style-type: none"> a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations. b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground. c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area. 	Significant and unavoidable (Criteria Air Pollutants) Less than significant (Valley Fever)

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers being exposed to dust shall leave the area until a truck can resume water spraying. e. All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system. f. Workers shall receive training to recognize the symptoms of Valley Fever, and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Kern County Planning and Natural Resources Department. g. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department. h. On-site personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health–approved respirators shall be provided to on-site personnel, upon request. Evidence of training shall be provided to the Kern County Planning. <p>MM 4.3-4: 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>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Cumulative Impacts			
Impact 4.3-3: The project would result in a cumulatively considerable net increase of any criteria pollutant for which the projects' region is nonattainment under applicable federal or State ambient air quality standards.	Significant and unavoidable (Construction and Decommissioning) Potentially significant (Operation)	Implementation Mitigation Measures MM 4.3-1 through MM 4.3-4 is required.	Significant and unavoidable (Construction and Decommissioning) Less than significant (Operation)
4.4 Biological Resources			
Impact 4.4-1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	Potentially Significant	<p>Implementation of Mitigation Measure MM 4.1-5 is required.</p> <p>MM 4.4-1: Prior to the issuance of grading or building permits, the project proponent/operator shall conduct preconstruction surveys to map the location and quantify the number of Joshua trees, Wiggins' cholla, and beavertail pricklypear.</p> <ul style="list-style-type: none"> a. The project proponent/operate shall pay the required fee to remove Wiggins' cholla, beavertail pricklypear, and Joshua tree in accordance with the California Desert Native Plants Act prior to construction activities. b. All alkali mariposa lilies that cannot feasibly be avoided in final project design shall have bulbs collected prior to construction. Additionally, a transplantation plan for alkali mariposa lily will be submitted and approved by the County prior to ground disturbance and bulb collection. The plan will include the following: <ul style="list-style-type: none"> i. Identify an area of occupied habitat either on site or off site to be preserved and where transplantation of bulbs will occur; and methods for preservation, restoration, enhancement, and/or translocation. ii. Indicate a replacement ratio and success standard of 1:1 for impacted to individuals. 	Less than Significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> iii. Establish a monitoring program to ensure mitigation success. iv. Create an adaptive management and remedial measures in the event that performance standards are not achieved. v. Ensure financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity. <p>c. Temporary ground disturbance associated with the transmission lines shall be recontoured to natural grade (if the grade was modified during the temporary disturbance activity), and revegetated with an application of a native seed mix prior to or during seasonal rains to promote passive restoration of the area to pre-project conditions. However, if invasive plant species were present, these species would not be restored. An area subjected to temporary ground disturbance means any area that is disturbed but will not be subjected to further disturbance as part of the project. This does not include areas already designated as urban/developed. Prior to seeding temporary ground disturbance areas, the qualified biologist will review the seeding palette to ensure that no seeding of invasive plant species, as identified in the most recent version of the California Invasive Plant Inventory for the region, will occur.</p> <p>MM 4.4-2: Prior to the issuance of grading or building permits from the County, the project proponent/operator shall retain a qualified biologist(s) who meets the qualifications of an authorized biologist as defined by U.S. Fish and Wildlife Service (USFWS) to oversee compliance with protection measures for all listed and other special-status species that may be affected by the construction of the project. The following measures pertain to qualified biologist(s) on site:</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> a. The qualified biologist(s) shall be on the project site during construction of perimeter fencing, clearing of vegetation, grading activities, and similar ground-disturbance activities that will be associated with the construction phase. b. The qualified biologist(s) shall have the right to halt all activities that are in violation of the special-status species mitigation measures, as well as any regulatory permits from the California Department of Fish and Wildlife and/or USFWS. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. c. The qualified biologist(s) shall have in her/his possession a copy of all the compliance measures while work is being conducted on the project site. d. Prior to issuance of grading or building permits, contact information for the qualified biologist(s) shall be submitted to the Kern County Planning and Natural Resources Department. e. 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>MM 4.4-3: Prior to the issuance of grading or building permits from the County, and for the duration of construction activities, and within a minimum of one-week initial ground disturbance, all construction workers shall attend an Environmental Awareness Training and Education Program that will be developed by a qualified biologist. Any personnel associated with construction that did not attend the initial training shall be trained by the authorized biologist or designee approved by the authorized biologist prior to working on the project site.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>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 prior to starting work on the project and on an annual basis.</p> <p>The Program will be developed and presented by the project qualified biologist(s) or designee approved by the qualified biologist(s) during construction. The Program shall include the components described below:</p> <ol style="list-style-type: none"> Information on the life history of the alkali mariposa lily, desert tortoise, burrowing owl, Swainson's hawk, loggerhead shrike, LeConte's thrasher, nesting birds, and desert kit fox; as well as other wildlife, special-status plant species, and the California Department of Fish and Wildlife-regulated drainages that may be affected during construction activities. The program shall also discuss the legal protection status of each species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education Program has been completed shall be kept on file at the construction site. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education Program and signed acknowledgement forms shall be submitted to the 	

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Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Kern County Planning and Natural Resources Department.</p> <p>d. A copy of the training transcript, training video, or informational binder for specific procedures shall be kept available for all personnel to review and be familiar with as necessary.</p> <p>e. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.</p> <p>f. The construction crews and contractor(s) shall be responsible for preventing unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits. Unauthorized impacts may result in project stoppage, and/or fines depending on the impact and consultation with the California Department of Fish and Wildlife and/or USFWS.</p> <p>MM 4.4-4: During construction, operations and maintenance, and decommissioning, the project proponent/operator and/or contractor(s) shall implement the general avoidance and protective measures described below.</p> <p>a. Prior to conducting vegetation clearing or grading activities associated with construction or decommissioning, a qualified biologist or biological monitor that has been approved by the qualified biologist shall perform pre-construction visual surveys of the area immediately prior to conducting these activities to ensure that no special-status animals are present. The qualified biologist or biological monitor</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>shall monitor all initial construction and decommissioning ground disturbance activities. A report of those activities shall be submitted to the Kern County Planning and Natural Resources Department within 30 days of completion of activities.</p> <p>b. All proposed impact areas, including solar fields, generation-tie lines, staging areas, access routes, and disposal or temporary placement of spoils, shall be delineated with stakes and/or flagging prior to construction to avoid sensitive biological resources (i.e., special-status species, jurisdictional drainages, nesting birds, etc.) where possible. Construction-related activities outside of the impact zone shall be avoided.</p> <p>c. Access roads that are planned for use during construction 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 construction.</p> <p>d. The project proponent/operator shall minimize 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 demarcated and disturbance activities, vehicles, and equipment shall be confined to these areas.</p> <p>e. Spoils shall be stockpiled in disturbed areas that lack native vegetation. Best Management Practices (BMPs) shall be employed to prevent erosion in accordance with the project's approved Stormwater Pollution Prevention Plan (SWPPP) (see Section 4.7, <i>Geology and Soils</i>, for more details on SWPPP requirements). All detected erosion shall be remedied as described in</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>the Erosion Control Plan of the SWPPP. 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.</p> <p>f. To prevent inadvertent entrapment of desert tortoises, desert kit foxes, American 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 placed a minimum of every 100 feet within the open trench. 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. 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 for their escape. If a listed species is trapped, the USFWS and/or CDFW, as appropriate for the species, and Kern County Planning and Natural Resources Department shall be contacted immediately.</p> <p>g. Desert tortoises, burrowing owls, mammals, and nesting birds may 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 the construction site for one or more overnight periods and without endcaps shall be thoroughly inspected by a qualified biologist for special-status wildlife or nesting</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until 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.</p> <p>h. No vehicle or equipment parked on the project site shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of wildlife. If present, the animal shall be left to move on its own.</p> <p>i. Vehicular traffic to and from the project site shall use existing routes of travel. Cross country vehicle and equipment use outside designated work areas shall be prohibited.</p> <p>j. A speed limit of 15 miles per hour shall be enforced within the limits of the proposed project. If night work occurs on the proposed project, the speed limit will be 10 miles per hour.</p> <p>k. Fueling of equipment shall take place within existing roads. No refueling within or adjacent to drainages (within 150 feet) shall be permitted. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary.</p> <p>l. The project proponent/operator shall submit a Maintenance, Trash Abatement, and Pest Management Program to the Kern County Planning and Natural Resources Department for review and approval. The program shall include, but not be limited to the following:</p> <p>i. The project proponent/operator shall clear debris from the project area at least twice per year once the project is operational; this can be done in</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>conjunction with regular panel washing and site maintenance activities.</p> <p>ii. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.</p> <p>iii. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.</p> <p>iv. The project proponent/operator shall implement a regular trash removal and recycling program once per month on an ongoing basis during construction, including a recycling program. Barriers/locking systems to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.</p> <p>m. Workers shall be prohibited from bringing pets and firearms to the project site and from feeding wildlife.</p> <p>n. Intentional killing or collection of any plant or wildlife species shall be prohibited.</p> <p>o. No rodenticides shall be used on the project site.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>p. Perimeter fencing during operations and maintenance shall be made wildlife friendly, but can be built to exclude desert tortoise.</p> <p>MM 4.4-5: To protect special status species from disturbance during construction, the actions described below shall occur.</p> <p>a. A qualified biologist (approved by the appropriate agency) shall monitor all initial ground-disturbance activities and remain on-call throughout construction in the event a special-status species wanders into the project site.</p> <p>b. Preconstruction surveys for special-status species shall be conducted within the project boundaries of the project site, as well as within a minimum of 500 feet from the project site to account for any inadvertent impacts to adjacent areas, by the qualified biologist within a maximum of 14 days of the start of any ground disturbing activities, such as geotechnical drilling vegetation clearing and/or grading. Methodology for preconstruction surveys shall be conducted as appropriate for special-status plants, desert tortoise, burrowing owl, Swainson's hawk, loggerhead shrike, Le Conte's thrasher, desert kit fox, and migratory birds, and shall follow U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife survey protocol guidelines, where appropriate. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site that will be disturbed. If evidence of occupation by a special-status species is observed, a suitable buffer shall be established by a qualified biologist that results in sufficient avoidance.</p> <p>MM 4.4-6: Prior to construction in the southern portion of the site, the project proponent/operator shall conduct</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>preconstruction desert tortoise surveys in accordance with the U.S. Fish and Wildlife Service protocol (2010). If no occupied burrows, fresh sign, or desert tortoise are discovered, no further mitigation is necessary. A survey report shall be submitted outlining the survey results.</p> <p>A permanent tortoise proof exclusion fence shall be installed around portions of the project cleared of occupied burrows, fresh sign or desert tortoise. If an occupied burrow, fresh sign, or desert tortoise are observed during preconstruction surveys or incidentally prior to or during construction activities, within the construction area, the project proponent/operator shall redesign the project layout so that the location of the occupied burrow, fresh sign, or desert tortoise would be avoided by the project and construction. For occupied burrows, an additional 300-foot buffer from the burrow would be avoided by the project and construction. The permanent tortoise proof exclusion fence would be installed so that any occupied burrow (and its 300-foot buffer), fresh sign, or desert tortoise is outside of the exclusion fence to prevent tortoise from entering the site.</p> <p>The permanent tortoise proof exclusion fence shall be installed around all construction and operation areas prior to the initiation of earth disturbing activities, in coordination with a qualified biologist. The fence shall be designed in such a manner to allow other wildlife to access through the permanent security fence and be constructed of 1-inch horizontal by 2-inch vertical mesh hardware cloth and extend 22-24 inches above ground and 12 inches below ground. Ultimate fence design must allow for desert kit fox pups to move in and out of the site, and species as large as coyotes access, but still protect the site from possible desert tortoise incursions (e.g., cinder block steps to a raised gap or opening in the fence). Where burial of the fence is not possible, the lower 12 inches shall be folded outward against the ground and fastened to the</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>ground so as to prevent desert tortoise entry. The fence shall be supported sufficiently to maintain its integrity, be checked at least monthly during construction and operations, and maintained when necessary by the project operator to ensure its integrity. Provisions shall be made for minimizing the potential for tortoise entry by placement of tortoise guards at the site entry. Common raven perching deterrents shall be installed as part of the fence construction.</p> <p>A qualified biologist shall conduct a preconstruction survey for desert tortoise within the construction site, as well as before and after installation of desert tortoise exclusionary fencing (if required to be installed) and of project security fencing. A qualified 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.</p> <p>A qualified biologist shall remain on site until all vegetation necessary for the construction of the project 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.</p> <p>A qualified biologist shall remain on-call throughout fencing and grading activities in the event a desert tortoise wanders onto the project site.</p> <p>MM 4.4-7: Prior to the issuance of grading or building permits, a Raven Management Plan shall be developed for the project site in consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. This plan shall include but is not limited to:</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> a. Identification of all raven nests within the project area during construction; b. Weekly inspection under all nests in the project area for evidence of raven predation on local wildlife (bones, carcasses, etc.), and, if evidence of predation is noted, submit a report to California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the Kern County Planning and Natural Resources Department within 5 calendar days; c. Provisions for the management of trash and water that could attract common ravens during the construction and operation phases of the proposed project. d. 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, 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>MM 4.4-8: The project proponent/operator shall implement the following measures, based on the recently updated California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation, to ensure potential impacts to burrowing owl resulting from project implementation, operation and maintenance, and decommissioning activities will be avoided and minimized to less than significant level:</p> <ul style="list-style-type: none"> a. A qualified wildlife biologist shall be on site during all initial grading and construction, pre-construction 	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>ground disturbing activities, and decommissioning activities. A qualified wildlife biologist (i.e., a wildlife biologist with the ability to identify the species and possessing previous burrowing owl survey and avoidance and minimization protection experience) shall conduct pre-construction surveys of all areas that will be permanently or temporary impacted, plus a 200-meter (approximately 656-foot) buffer, to locate active breeding or wintering burrowing owl burrows.</p> <p>b. The survey(s) shall occur no more than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading). The survey methodology shall be consistent with the methods outlined in the 2012 CDFW Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting and mapping any potential burrows with burrowing owl signs or presence of burrowing owls.</p> <p>c. As each burrow is investigated, project biologists shall also look for signs of American badger and desert kit fox. Surveys may also be conducted concurrently with desert tortoise preconstruction surveys. A biologist shall prepare a preconstruction survey report that shall be submitted to CDFW and the Kern County Planning and Natural Resources Department.</p> <p>d. A qualified biologist shall conduct an additional preconstruction survey of all impact areas plus an approximately 200-meter buffer no more than 24-hours prior to start or restart (as the case may be) of ground disturbing activities associated with construction or decommissioning activities as authorized by this approval to identify any additional burrowing owls or burrows necessitating avoidance, minimization, or mitigation measures.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>e. If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted within 200 meters of an occupied burrow during the breeding season (February 1 to August 31), unless authorized by CDFW. During the non-breeding season (September 1 through January 31), no ground-disturbing activities shall be permitted within 50 meters (165 feet) of an occupied burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.</p> <p>f. 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 E1 (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,</p> <p>g. 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. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation Land.</p> <p>h. If passive relocation is required, the project proponent shall implement the Mitigation Land Management Plan and permanently conserve in a conservation easement offsite habitat suitable for burrowing owl at ratio of 15 acres per passively relocated burrowing owl pair, not to exceed the size of the final project</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>footprint. Land identified to mitigate for passive relocation of burrowing owl may be combined with other offsite mitigation requirements of the proposed project if the compensatory habitat is deemed suitable to support the species. The Passive Relocation Compensatory Mitigation habitat shall be approved by California Department of Fish and Wildlife. If the proposed project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits in lieu of placing offsite habitat into a conservation easement, if acceptable to California Department of Fish and Wildlife.</p> <p>MM 4.4-9: To mitigate for potential impacts to nesting birds, special-status birds, and birds protected under the MBTA and CFGC during construction and decommissioning activities, the following measures shall be implemented as part of the approval for a grading or building permit.</p> <p>a. During the avian nesting season (February 1–August 31), a qualified biologist shall conduct a preconstruction avian nesting survey no more than 14 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 14 days prior to clearing or disturbance in specific areas of the site. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. At no time shall the qualified 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, including ground nesting species, such as horned lark and killdeer, nests in shrubs that could support nests, and suitable raptor</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>nest sites such as nearby trees, windrows, 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.</p> <p>b. If construction is scheduled to occur during the non-nesting season (September 1–February 1), no preconstruction surveys or additional measures are required for non-listed avian species.</p> <p>c. If active nests are found, a 100-foot no-disturbance buffer shall be created around non-listed avian 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 CDFW). Any nest of a federally or state-listed bird species shall require consultation with the appropriate agency (USFWS or the CDFW) to determine the appropriate buffer distance surrounding the nest to provide adequate nest protection. These buffers shall remain in effect until a qualified biologist has determined that the birds have fledged or the 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.</p> <p>MM 4.4-10: The project proponent/operator shall implement the following measures to ensure potential impacts to desert kit foxes and American badger resulting from project implementation and decommissioning activities will be avoided and minimized to less than significant levels:</p> <p>a. A qualified biologist shall be on site during all initial grading and construction, preconstruction ground</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>disturbing activities, and decommissioning activities. A qualified biologist (i.e., a biologist with the ability to identify the species and possessing previous mammal survey and avoidance and minimization protection experience) shall conduct pre-construction surveys of all areas that will be permanently or temporarily impacted, plus a 500-foot buffer, to locate unoccupied and occupied dens.</p> <p>b. Unoccupied potential dens for desert kit fox or American badger shall have a minimum 30-foot avoidance buffer established.</p> <p>c. An occupied den outside of the pup-rearing season shall be flagged and ground-disturbing activities avoided within 100 feet of the occupied den. An occupied den during the pup-rearing season, also known as a maternity den, should not be disturbed and a minimum 500-foot avoidance buffer established.</p> <p>a. Desert kit fox pup-rearing season: February 1–August 1.</p> <p>b. American badger pup-rearing season: March 15–July 31.</p> <p>d. If outside the pup-rearing season, an occupied den cannot be avoided, passive relocation program can occur. The program shall consist of determining status of the den (confirming it's a non-maternity den through remote camera monitoring), excluding desert kit fox or American badger from occupied non-maternity den by installation of one-way doors at burrow entrances, monitoring of the den for 7 days to confirm usage has been discontinued, and excavation and collapse of the den. Passive relocation occurs by slowly excavating the burrow (either by hand or by mechanized equipment) under the direct supervision of a qualified biologist and removing no more than 4 inches of soil at a time. Passive relocation cannot</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>occur during the pup-rearing season unless remote camera monitoring has documented the den as a non-maternity den. A written report documenting the passive relocation shall be provided to the Kern County Planning and Natural Resources Department within 30 days of relocation.</p> <p>e. Dens or burrows that are determined to be inactive as determined by a qualified biologist within the project site, shall be collapsed by a qualified biologist to prevent occupation of the den between the time of the preconstruction survey and construction activities.</p> <p>MM 4.4-11: The project proponent/operator shall install power lines in conformance with Avian Power Line Interaction Committee (APLIC) standards for electrocution-reducing techniques as outlined in suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), and for collision-reducing techniques as outlined in Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), or any superseding document issued by APLIC.</p> <p>MM 4.4-12: During the operations and maintenance phase of the project, an Avian Mortality Monitoring Program shall be developed in coordination with CDFW and USFWS and implemented to systematically and periodically determine the extent of mortality occurring due to collisions with solar arrays. The measures listed below apply to the program:</p> <p>a. The Avian Mortality Monitoring Program shall be developed following the Mortality Monitoring Design for Utility-Scale Solar Power Facilities and include methods to achieve Objective 1 (monitoring to estimate total bird and bat mortality). Methods include using a trained and skilled team of authorized biologists to systematically sample the project site by</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>walking transects through the solar arrays scanning for deceased birds.</p> <p>b. Data shall be collected on any encountered deceased wildlife species including species, condition of the carcass, approximate age, presence of feathers, etc.</p> <p>c. Additionally, maintenance personnel working on the project site that encounter injured or deceased birds (or any other wildlife) should be trained to collect data and photograph the encountered species.</p> <p>d. Mortality monitoring shall be conducted for a minimum 1-year period following the commencement of the operations and maintenance phase of the project. Quarterly reporting of results shall be prepared and provided to state and federal agencies, if requested.</p> <p>e. Appropriate performance standards for mitigation of impacts to any species regulated by the Bald and Golden Eagle Protection Act, Endangered Species Act, and California Endangered Species Act exist through required consultation with USFWS and CDFW under their respective regulatory and permitting frameworks. If, after 2 years of mortality monitoring, project impacts to any other avian species caused by the project are shown to result in a substantial, long-term reduction in the demographic viability of the population of the species in question, then adaptive management must be implemented to reduce impacts to below this threshold. Adaptive management measures may include but not be limited to passive avian diverter installations, the use of sound, light or other means to discourage site use consistent with legal requirements, on site habitat management or control measures consistent with applicable legal requirements, or modification to support structures to exclude nesting birds.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.4-2: The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.	Potentially significant	<p>MM 4.4-13: Prior to issuance of any grading or building permit, the project proponent/operator shall submit a report detailing how all identified ephemeral drainages are avoided and will be continually complied with during the life of the project. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board (RWQCB) and the County. The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:</p> <ul style="list-style-type: none"> a. Potential jurisdictional features (ephemeral drainages) identified in the jurisdictional delineation report shall be avoided. This may be shown in plan form. b. Any material/spoils generated from project activities shall be located away from jurisdictional areas or special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate. c. Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from the top of bank. d. Any spillage of material will be stopped if it can be done safely. The contaminated area will be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative will be notified. <p>MM 4.4-14: If potential jurisdictional features cannot be avoided, the project proponent/operator shall be subject to provisions as identified below:</p> <ul style="list-style-type: none"> a. If avoidance is not practical, prior to ground disturbance activities that could impact these aquatic features, the project proponent/operator shall file a 	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>complete Report of Waste Discharge with the RWQCB to obtain Waste Discharge Requirements and shall also consult with CDFW on the need for a streambed alteration agreement. Copies of the final report shall be submitted to the County.</p> <p>b. Based on consultation with RWQCB and CDFW, if permits are required for the project site, appropriate permits shall be obtained prior to disturbance of jurisdictional resources.</p> <p>c. Compensatory mitigation for impacts to unvegetated streambeds/washes shall be identified 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.</p> <p>d. The project proponent/operator 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 County.</p> <p>e. A Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared that outlines the compensatory mitigation in coordination with the RWQCB and CDFW.</p> <p>i. If onsite mitigation is proposed, the HMMP shall identify those portions of the site, such as relocated drainage routes, that contain suitable characteristics (e.g., hydrology) for restoration. Determination of mitigation adequacy shall be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity (such as upstream or downstream of the site).</p> <p>ii. The HMMP shall include remedial measures in the event that performance criteria are not met.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>iii. If mitigation is implemented offsite, mitigation lands shall be comprised of similar or higher quality and preferably located in Kern County. Offsite land shall be preserved through a deed restriction or conservation easement and the HMMP shall identify an approach for funding assurance for the long-term management of the conserved land. Alternatively, the applicant may purchase credits from an approved mitigation bank.</p> <p>iv. Copies of any coordination, permits, etc., with RWQCB and CDFW shall be provided to the County.</p>	
Impact 4.4-3: The project would have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.4-4: The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.4-5: The proposed project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Potentially significant	Implementation of Mitigation Measure MM 4.4-1 through MM 4.1-14 is required.	Less than significant
Impact 4.4-6: The project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	Less than significant	No mitigation measures are required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.4: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.1-5 and MM 4.4-1 through MM 4.4-14 are required.	Significant and unavoidable
4.5 Cultural Resources			
Impact 4.5-1: The project would cause a substantial adverse change in the significance of a historical resource as defined in CEQA <i>Guidelines</i> Section 15064.5.	Potentially significant	<p>MM 4.5-1: The project proponent/operator shall retain a Lead Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior, 2011), to carry out all mitigation measures related to archaeological and unique historical resources. The contact information for this Lead Archaeologist shall be provided to the Kern County Planning and Natural Resources Department prior to the commencement of any construction activities onsite. Further, the Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project:</p> <p>a. Prior to commencement of any ground disturbing activities, the Lead Archaeologist in consultation with the Native American monitor(s) shall develop a Cultural Resources Sensitivity Training for all personnel working on the proposed project. A Cultural Resources Sensitivity Training Guide approved by the Lead Archaeologist shall be provided and discussed with all personnel. The training guide may be presented in video form. A copy of the proposed training materials shall be provided to the Planning and Natural Resources Department prior to the issuance of any grading or building permit.</p> <p>The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Lead Archaeologist and/or Native American monitor(s) for further evaluation and action,</p>	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.</p> <p>b. A copy of the Cultural Resources Sensitivity Training Guide/Materials shall be kept onsite and available for all personnel to review and be familiar with as necessary. It is the responsibility of the Project Owner to ensure all employees receive appropriate training before the work onsite.</p> <p>MM 4.5-2: The project proponent shall ensure the following measure is implemented for the prehistoric archaeological site located within the northern site (SS-S-110):</p> <p>a. Prior to conducting initial ground disturbance in the vicinity of the archaeological site SS-S-110, and in coordination with the Lead Archaeologist and Native American monitor(s), an exclusion area, consisting of the significant deposits located at SS-S-110 and a 50-foot buffer, shall be temporarily marked with exclusion markers or protective fencing as determined by the Lead Archaeologist in consultation with the Native American monitor. In the event avoidance is not feasible, a data recovery plan shall be prepared by a professional archeologists that is reviewed and approved by the County in consultation with the Native American monitor.</p> <p>MM 4.5-3: During implementation of the project, the services of Native American Tribal Monitor(s) working under the supervision of the Lead Archaeologist, as identified through consultation with appropriate Native American tribes, shall be retained by the project proponent/operator to monitor all initial ground-disturbing activities associated with project-related construction activities, as follows:</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> a. All initial excavation and ground-disturbing activities shall be monitored by archaeological and Native American monitors. b. The Lead Archaeologist, archaeological monitors, and Native American monitors shall be provided all project documentation related to cultural resources within the project site prior to commencement of ground disturbance activities. 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 Lead Archaeologist, archaeological monitor, and Native American monitor. c. The archaeological monitor(s) shall keep monitoring logs and the Lead Archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the Lead Archaeologist shall prepare a monitoring report detailing the results of monitoring, which shall be submitted to the Kern County Planning and Natural Resources Department and to the southern San Joaquin Valley Information Center at California State University, Bakersfield. <p>MM 4.5-4: During implementation of the project, in the event archaeological materials are encountered during the course of grading or construction beyond those already documented and found to be not significant for listing in the CRHR, the project contractor shall cease any ground disturbing activities within 50 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 50-foot radius from the location of discovery. Signs shall be posted that establish it as an Environmentally Sensitive Area and all entrance to the area shall be avoided until the discovery is assessed by the</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Lead Archaeologist, as well as the Native American monitor if the discovery involves resources of interest to Native American tribes, including but not limited to prehistoric archaeological sites or tribal cultural resources. The Lead Archaeologist in consultation with the Native American monitor, if appropriate, shall evaluate the significance of the resources and recommend appropriate treatment measures. If further treatment of the discovery is necessary, the Environmentally Sensitive Area shall remain in place until all work is completed. Per California Environmental Quality Act Guidelines (CEQA) Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist in consultation with the Native American monitor shall develop additional treatment measures in consultation with the County, which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The Lead Archaeologist, in consultation with a designated Native American monitor, shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA <i>Guidelines</i> Section 15064.5.	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 is required.	Less than significant
Impact 4.5-3: The project would disturb any human remains, including those interred outside of formal cemeteries.	Potentially significant	MM 4.5-5: If human remains are uncovered during project construction, the project contractor shall immediately halt work within 100 feet of the find, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.4 (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.	Less than significant
Impact 4.5: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5 is required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.6 Energy			
Impact 4.6-1: The project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	Potentially significant	Implementation of Mitigation Measure MM 4.3-1 would be required.	Less than significant
Impact 4.6-2: The project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.6: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measure MM 4.3-1 would be required.	Less than significant
4.7 Geology and Soils			
Impact 4.7-1: 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	No mitigation measures are required.	Less than significant
Impact 4.7-2: 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.	Potentially significant	<p>MM 4.7.1: 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> <ol style="list-style-type: none"> 1. The geotechnical study must be signed by a California-registered and licensed professional geotechnical engineer or engineering geologist and must include, but not be limited to, the following: <ol style="list-style-type: none"> a. Location of fault traces and potential for surface rupture and groundshaking potential; 	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> b. Maximum considered earthquake and associated ground acceleration for design; c. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils; d. Stability of any existing or proposed cut-and-fill slopes; e. Collapsible or expansive soils; f. Foundation material type; g. Potential for wind erosion, water erosion, sedimentation, and flooding; h. Location and description of unprotected drainage that could be impacted by the proposed development; and, i. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground. <p>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 an active fault trace.</p> <p>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.</p> <p>MM 4.7-2: Prior to the issuance of grading permits, the project proponent shall retain a California registered and licensed geotechnical engineer to design the project facilities to withstand probable seismically induced ground shaking at the site. All grading and construction onsite shall adhere to the specifications, procedures, and</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.7-3: The project would result in substantial soil erosion or the loss of topsoil.	Potentially significant	<p>site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California-registered professional engineer.</p> <ol style="list-style-type: none"> 1. The procedures and site conditions shall encompass site preparation, foundation specifications, and protection measures for buried metal. 2. 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>MM 4.7-3: The construction contractor shall incorporate BMPs consistent with National Pollutant Discharge Elimination System (NPDES) General Construction Permit Program for all construction projects that would not retain all stormwater onsite and the Kern County Grading Code. The project proponent shall prepare an Erosion and Sedimentation Control Plan as well as a Stormwater Pollution Prevention Plan (SWPPP). The plan shall be prepared by a Qualified SWPPP Developer (QSD) and submitted for review and approval by the applicable Regional Water Quality Control Board. The SWPPP BMPs shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • Scheduling to avoid construction during rain events to the maximum extent possible • Preservation of existing vegetation and topography to the maximum extent practicable • Stabilized construction entrances and exits 	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> • Erosion control (including all pertinent temporary erosion control practices as specified in Chapter 17.28.140 of the Kern County Grading Code), such as mulching, temporary drains and cullies, sandbag barrier, geotextiles and mats, silt fences, brush or rock filters, earth dikes, straw bale barriers, and sediment traps • Sediment control • Waste management • Good housekeeping • Post-construction site stabilization <p>Prior to initial construction mobilization, preconstruction surveys shall be performed and sediment and erosion controls shall be installed in accordance with the approved SWPPP. A copy of the approved SWPPP shall be submitted to the Kern County Planning and Natural Resources Department.</p> <p>MM 4.7-4: The project proponent shall limit grading to the minimum area necessary for construction. Prior to the initiation of construction, the project proponent shall retain a California registered and licensed professional engineer to submit final grading earthwork and foundation plans to the Kern County Public Works for approval.</p>	
Impact 4.7-4: The project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	Potentially significant	Implementation of Mitigation Measures MM 4.7-1 and MM 4.7-2 is required.	Less than significant
Impact 4.7-5: The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	Potentially significant	Implementation of Mitigation Measure MM 4.7-1 is required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.7-6: The project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.7-7: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, as defined in CEQA <i>Guidelines</i> Section 15064.	Potentially significant	<p>MM 4.7-5: The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (SVP, 2010), to carry out all mitigation measures related to paleontological resources.</p> <ol style="list-style-type: none"> 1. Prior to the start of any ground disturbing activities, the qualified paleontologist shall prepare a Paleontological Resources Awareness Training program for all construction personnel working on the project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training Guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form. 2. Paleontological Resources Awareness Training may be conducted in conjunction with other awareness training requirements. 3. The training shall include an overview of potential paleontological resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources. 	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>4. The Paleontological Resources Awareness Training Guides shall be kept onsite and available for all personnel to review and be familiar with as necessary.</p> <p>MM 4.7-6: A qualified paleontologist or designated monitor shall be onsite initially to spot-check excavations below a depth of one foot below the ground surface in a given area. If it is determined that sediments consist of older alluvium, then full-time paleontological monitoring shall ensue. If sediments are determined to consist of Holocene Quaternary alluvium, paleontological monitoring shall be suspended until an excavation depth of five feet below the ground surface is reached in the area.</p> <p>a. The duration and timing of monitoring shall be determined by the qualified paleontologist in consultation with the Kern County Planning and Natural Resources Department, and shall be based on a review of geologic maps and grading plans.</p> <p>i. During the course of monitoring, if the paleontologist can demonstrate based on observations of subsurface conditions that the level of monitoring should be reduced, the paleontologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances, as warranted.</p> <p>b. Paleontological monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments. The qualified paleontologist shall have authority to temporarily divert excavation operations away from exposed fossils to collect associated data and recover the fossil specimens if deemed necessary.</p> <p>c. Following the completion of construction, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources onsite. If</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, recovery and curation efforts, and the methods used in these efforts, as well as describe the fossils collected and their significance. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to an appropriate repository such as the Natural History Museum of Los Angeles County.</p> <p>MM 4.7-7: If a paleontological resource is found, the project contractor shall cease ground-disturbing activities within 50 feet of the find. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials. Accompanying notes, maps, and photographs shall also be filed at the repository.</p>	
Impact 4.7: Cumulative Impacts	Less than significant	Implementation of Mitigation Measure MM 4.7-1 through MM 4.7-7 is required.	Less than significant
4.8 Greenhouse Gas Emissions			
Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.8-2: The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Less than significant	No mitigation measures are required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.8: Cumulative Impacts	Less than significant	No mitigation measures are required.	Less than significant
4.9 Hazards and Hazardous Materials			
Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Potentially significant	<p>Implementation of Mitigation Measure MM 4.17-1 is required.</p> <p>MM 4.9-1: During the life of the project, including decommissioning, the project operator shall prepare and maintain a Hazardous Materials Business Plan (HMBP), as applicable, pursuant to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern County Ordinance Code 8.04.030, by submitting all the required information to the California Environmental Reporting System (CERS) at http://cers.calepa.ca.gov/ for review and acceptance by the Kern County Environmental Health Services Division/Hazardous Materials Section. The HMBP shall:</p> <ul style="list-style-type: none"> • Delineate hazardous material and hazardous waste storage areas • Describe proper handling, storage, transport, and disposal techniques • Describe methods to be used to avoid spills and minimize impacts in the event of a spill • Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction and operation • Establish public and agency notification procedures for spills and other emergencies including fires • Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site <p>The project proponent shall ensure that all contractors working on the project are familiar with the facility's HMBP as well as ensure that one copy is available at the project site at all times. In addition, a copy of the accepted</p>	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.9-2: The project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Potentially significant	HMBP from CERS shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the projects permanent record. Implementation of Mitigation Measure MM 4.17-1 and MM 4.9-1 is required. MM 4.9-2: The project proponent/operator shall continuously comply with the following: a. The construction contractor or project personnel shall use herbicides that are approved by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service for use in California and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use). Personnel applying herbicides shall have all appropriate State and local herbicide applicator licenses and comply with all State and local regulations regarding herbicide use. b. Herbicides shall be mixed and applied in conformance with the manufacturer's directions. c. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and 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.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		f. A written record of all herbicide applications on the site, including dates and amounts, shall be furnished annually to the Kern County Planning and Natural Resources Department.	
Impact 4.9-3: The project would emit hazardous emissions or involves handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.9-4: The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.9-5: The project would result in a safety hazard or excessive noise for people residing or working in the project area, for a project located within the vicinity of a private airstrip.	Potentially significant	MM 4.9-3: Prior to the issuance of building and grading permits, the project proponent/operator shall comply with the following: <ul style="list-style-type: none"> a. Submit Form 7460-1 (Notification of Proposed Construction or Alteration) to the Federal Aviation Administration, in the form and manner prescribed in Code of Federal Regulation 77.17. b. Obtain a Federal Aviation Administration issued "Determination of No Hazard to Air Navigation." This documentation shall include written concurrence from the military authority responsible for operations in the flight area depicted in the Kern County Zoning Ordinance Figure 19.08.160 that all project components in the flight area would create no significant military mission impacts. c. Provide documentation to the Kern County Planning and Natural Resources Department demonstrating that a copy of the final site plans has been provided to the operators of Mojave Air Space and Port. 	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.9-6: The project would impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan	Potentially significant	Implementation of Mitigation Measure MM 4.15-1 is required.	Less than significant
Impact 4.9-7: The project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	Potentially significant	Implementation of Mitigation Measure MM 4.14-1 is required.	Less than significant
Impact 4.9-7: The project would generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste? Specifically, would the proposed project exceed the following qualitative threshold: the presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the proposed project is significant when the applicable enforcement agency determines that any of the vectors: <ul style="list-style-type: none"> i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; or ii Are associated with design, layout, and management of proposed project operations; or iii. Disseminate widely from the property; or iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population. 	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.9: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.14-1, MM 4.15-1, and MM 4.17-1 is required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.10 Hydrology and Water Quality			
Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise degrade water quality.	Potentially significant	<p>Implementation of Mitigation Measures MM 4.7-3 and MM 4.9-1 is required.</p> <p>MM 4.10-1: Prior to the issuance of a grading permit, the project proponent/operator shall complete a final drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study shall include, but is not limited to the following:</p> <ol style="list-style-type: none"> 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. 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. 3. The drainage plan would include engineering recommendations to be incorporated into the project design and applied within the site boundary. Engineering recommendations will include measures to offset increases in stormwater runoff that would result from the project, as well as implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding onsite or offsite. 4. The final design of the solar arrays shall include one-foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Solar panel sites located within a 100-year floodplain shall be installed on piers so that the panels are located one-foot above the calculated maximum flood depths or graded to direct potential flood waters without 	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		increasing the water surface elevations more than one foot or as required by Kern County's Floodplain Management Ordinance. 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.	
Impact 4.10-2: The project would 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.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.10-3: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion and/or sedimentation on-site or off-site.	Potentially significant	Implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1 is required.	Less than significant
Impact 4.10-4: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in flooding onsite or offsite.	Potentially significant	Implementation of Mitigation Measure MM 4.10-1 is required.	Less than significant
Impact 4.10-5: The project would create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.	Potentially significant	Implementation of Mitigation Measure MM 4.10-1 is required.	Less than significant
Impact 4.10-6: The project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.	Potentially significant	Implementation of Mitigation Measure MM 4.10-1 is required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.10-7: The project would result in a flood hazard, tsunami, or seiche zone, and risk release of pollutants due to project inundation.	Potentially significant	Implementation of Mitigation Measure MM 4.10-1 is required.	Less than significant
Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.10: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.7-3, MM 4.9-1, MM 4.9-2, and MM 4.10-1 is required.	Less than significant
4.11 Land Use			
Impact 4.11-1: The project would physically divide an established community.	Potentially significant	Implementation of Mitigation Measure MM 4.9-3 is required.	Less than significant
Impact 4.11-2: The project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.11: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measure MM 4.9-3 is required. MM 4.11-1: Prior to issuance of any building permit, the project operator shall provide for review and approval by the Kern County Engineering, Surveying, and Permit Services Department or a County-contracted consulting firm at a cost to be borne by the project operator. The Decommission Plan shall factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from removal of support structures, and control of fugitive dust on the remaining undeveloped land. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations. The assumption, when preparing the estimate, is that the project operator is incapable of	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>performing the work or has abandoned the solar facility, thereby requiring Kern County to hire an independent contractor to perform the decommissioning work. In addition to submitting a Decommission Plan, the project operator shall post or establish and maintain financial assurances with Kern County related to the deconstruction of the site as identified on the approved Decommission Plan in the event that at any point in time the project operator determines it is not in the company's best interest to operate the facility.</p> <p>The financial assurance required prior to issuance of any building permit shall be established using one of the following:</p> <ol style="list-style-type: none"> An irrevocable letter of credit; A surety bond; A trust fund in accordance with the approved financial assurances to guarantee the deconstruction work will be completed in accordance with the approved decommission plan; or Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department. <p>The financial institution or Surety Company shall give the County at least 120 days' notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed annually by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate those adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommission Plan. Should the project operator deconstruct the site on their</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>own, the County will not pursue forfeiture of the financial assurance.</p> <p>Once deconstruction has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommission of the site by the County shall be returned to the project operator.</p> <p>Should any portion of the solar field not be in operational condition for a consecutive period of twelve 12 months that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project operator, by the County. Within this sixty (60) day period, the property owner, solar field owner, or project operator may provide the director of the Kern County Planning and Natural Resources Department a written request and justification for an extension for an additional twelve (12) months. The Kern County Planning and Natural Resources Director shall consider any such request at a Director's Hearing as provided for in Section 19.102.070 of the Kern County Zoning Ordinance. In no case shall a solar field that has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date, the solar facility was first deemed abandoned.</p> <p>MM 4.11-2: Prior to the operation of the solar facility, the operator shall consult with the Department of Defense to identify the appropriate Frequency Management Office officials to coordinate the use of telemetry to avoid potential frequency conflicts with military operations.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.12 Mineral Resources			
Impact 4.12-1: The project would result in the loss of availability of a known mineral resource that would be of value to the region and residents of the State.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.12-2: The project would result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.12: Cumulative Impacts	Less than significant	No mitigation measures are required.	Less than significant
4.13 Noise			
Impact 4.13-1: The project would result in generation of a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.	Potentially significant	<p>MM 4.13-1: The following measures are to be implemented to further reduce short-term noise levels associated with project construction and decommissioning:</p> <ul style="list-style-type: none"> a. Equipment staging shall be located in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during construction to the extent practical. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, where feasible. Equipment staging shall be located in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during construction to the extent practical. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, where feasible. b. Construction equipment shall be fitted with noise-reduction features such as mufflers and engine shrouds 	<p>Significant and Unavoidable (Construction and Decommissioning)</p> <p>Less than significant (Operation)</p>

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>that are no less effective than those originally installed by the manufacturer.</p> <p>c. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9 p.m. to 6 a.m. on weekdays, and between 9 p.m. to 8 a.m. on weekends. These hourly limitations shall not apply to activities where hourly limitations would result in increased safety risk to workers or the public, such as commissioning and maintenance activities that must occur after dark to ensure photovoltaic arrays are not energized, unanticipated emergencies requiring immediate attention, or security patrols.</p> <p>d. Haul trucks shall not be allowed to idle for periods greater than five minutes, except as needed to perform a specified function (e.g., concrete mixing).</p> <p>e. Onsite vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency).</p> <p>f. Back-up beepers for all construction equipment and vehicles shall be broadband sound alarms or adjusted to the lowest noise levels possible, provided that the Occupational Safety and Health Administration and California Division of Occupational Safety and Health's safety requirements are not violated. On vehicles where back-up beepers are not available, alternative safety measures such as escorts and spotters shall be employed.</p> <p>MM 4.13-2: The construction contractor shall establish a Noise Disturbance Coordinator for the project during construction. The Noise Disturbance Coordinator shall be responsible for responding to any complaints about construction noise. The Noise Disturbance Coordinator</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>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.</p> <p>MM 4.13-3: Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), the project proponent/operator shall provide written notice to the public through mailing a notice, which shall include:</p> <ol style="list-style-type: none"> 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 and a telephone number and email address where complaints and questions can be registered with the noise disturbance coordinator. 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. 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. 	
Impact 4.13-2: The project would expose persons to or generate excessive ground borne vibration or ground borne noise levels.	Less than significant	No mitigation measures are required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.13-3: The project would create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.13: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.13-1 and MM 4.13-3 is required.	Less than significant
4.14 Public Services			
Impact 4.14-1: The project would result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services or police protection and law enforcement services.	Potentially significant	<p>MM 4.14-1: Prior to the issuance of grading or building permits, the project proponent/operator shall develop and implement a Fire Safety Plan for use during construction, operation and decommissioning.</p> <p>The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. A copy of the approved Fire Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:</p> <ol style="list-style-type: none"> All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types will maintain their factory-installed (type) muffler in good condition. Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials. 	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>e. Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats.</p> <p>f. The project proponent/operator shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.</p> <p>g. Building plans shall be included for the energy storage system to verify adherence to County and California Building Code standards.</p> <p>MM 4.14-2: The project proponent/operator shall implement the following mitigation steps at the project site:</p> <p>a. For facility operation, the project proponent/operator shall pay for impacts on countywide public protection, sheriff's patrol and investigative services, and fire services at a rate of \$29.59 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.</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>b. 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 that entity shall pay the 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.</p> <p>c. The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project proponent/operator obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization. As an alternative to the aforementioned process, the project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes.</p> <p>d. Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.	
Impact 4.14: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2 is required.	Less than significant
4.15 Traffic and Transportation			
Impact 4.15-1: The project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.15-2: The project would conflict with an applicable Congestion Management Program, including, but not limited to level of service standards and travel demand measures, or other standards developed by the County Congestion Management Agency for Designated Roads or Highways.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.15-3: The project would substantially increase hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Potentially significant	MM 4.15-1: Prior to the issuance of construction or building permits, the project proponent/operator shall: A. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 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:	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> i. Timing of deliveries of heavy equipment and building materials; ii. Directing construction traffic with a flag person; iii. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic; iv. Establish procedures for coordinating with local emergency response agencies to ensure dissemination of information regarding emergency response vehicle routes affected by construction activities; v. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections; vi. Maintaining access to adjacent property; vii. Encourage carpooling among workers to reduce worker commute trips entering and exiting the study area; and viii. 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. ix. Restrict and distribute PM peak hour traffic flows associated with the construction of gen-tie facilities onto adjacent roadways so that some traffic would use higher capacity facilities, rather than Purdy Avenue, to complete the left-turn movements across SR-14, as follows: 	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>a. All east-bound left turning project traffic related to the gen-tie component shall utilize Silver Queen Road or Oak Creek Road to access SR-14 during the PM peak hour.</p> <p>b. A portion of the west-bound project traffic, equal to or greater than five vehicles, shall utilize the Backus Road interchange to access SR-14 during the PM peak hour.</p> <p>Monitoring shall be conducted on a weekly basis by the project proponent/operator and any deficiencies shall be corrected immediately. Proof of compliance shall be available and furnished at the request of the Kern County Public Works Department-Development Review at any time during construction of gen-tie facilities.</p> <p>B. Obtain all necessary encroachment permits for work within the road right-of-way or use of oversized/overweight vehicles that will utilize County-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved 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.</p> <p>C. Enter into a secured agreement with Kern County to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and/or Kern County.</p> <p>D. Submit documentation that identifies the roads to be used during construction. The project proponent/operator shall be responsible for repairing any damage to non-county maintained roads that may result from construction activities. The project</p>	

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		proponent/operator shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the Kern County Public Work Department-Development Review and the Kern County Planning and Natural Resources Department.	
		E. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log and inspection report to the County. This information shall be submitted in DVD format. The County, in consultation with the project proponent/operator's engineer, shall determine the extent of remediation required, if any.	
Impact 4.15-4: The project would result in inadequate emergency access.	Potentially significant	Implementation of Mitigation Measure MM 4.15-1 is required.	Less than significant
Impact 4.15: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measure MM 4.15-1 is required.	Less than significant
4.16 Tribal Cultural Resources			
Impact 4.16-1a: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).	Less than significant	No mitigation measures are required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.16-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.16: Cumulative Impacts	Less than significant	No mitigation measures are required.	Less than significant
4.17 Utilities and Service Systems			
Impact 4.17-1: The project would require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	Potentially significant	Implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1 is required.	Less than significant
Impact 4.17-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	Less than significant	No mitigation measures are required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 4.17-3: The project would generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	Potentially significant	<p>MM 4.17-1: During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible. The provisions listed below shall apply to the project.</p> <ol style="list-style-type: none"> 1. An onsite Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Construction, Operation and Maintenance and Decommissioning, Trash Abatement and Pest Management Program. 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 the Kern County Planning and Natural Resources Department prior to issuance of building permits. 5. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations and decommissioning. A site plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site. 	Less than significant
Impact 4.17-4: The project would comply with federal, State, and local management and reduction statutes and regulations related to solid waste.	Potentially significant	Implementation of Mitigation Measure MM 4.17-1 is required.	Less than significant
Impact 4.17: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.7-3, MM 4.10-1, and MM 4.17-1 is required.	Less than significant

TABLE 1-6: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.18 Wildfire			
Impact 4.18-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.	Less than significant	No mitigation measures are required.	Less than significant
Impact 4.18-2: The project would, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	Potentially significant	Implementation of Mitigation Measure MM 4.14-1 is required.	Less than significant
Impact 4.18-3: The project would require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	Potentially significant	Implementation of Mitigation Measure MM 4.14-1 is required.	Less than significant
Impact 4.18-4: The project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes.	Potentially significant	Implementation of Mitigation Measure MM 4.10-1 is required.	Less than significant
Impact 4.18: Cumulative Impacts	Significant and unavoidable	Implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1 is required.	Significant and unavoidable

2.1 Intent of the California Environmental Quality Act

The Kern County Planning and Natural Resources Department, as lead agency, has determined that an Environmental Impact Report (EIR) must be prepared for the proposed Sanborn Solar Project (project). The project is located on approximately 2,006 acres that would generate up to 300 megawatts (MW) of electricity from a photovoltaic (PV) solar facility and up to 3 GWh of energy storage in unincorporated Kern County.

The project site is comprised of two discontinuous sites, the north or northern site and south or southern site, the northern site is approximately 1,041 acres and the southern site is approximately 965 acres, each of which would contain solar and energy storage facilities. The project would be built in phases and each site has two options for interconnection. Option 1 would be a 230 kilovolt (kV) generation tie-in line (gen-tie) would be located near Lone Butte Road, be constructed from an onsite project substation, and would connect to an existing transmission line with connection equipment situated on up to 5 acres of land at the corner of United Street and Purdy Avenue, or travel west to the Southern California Edison (SCE) Windhub and or/ Westwind Substation. Option 2 would be a 34.5 kV collection line that would be constructed from the western limits of the project site near Lone Butte Road and travel west to a step-up conversion station (United Street step-up conversion station), which would be stepped-up to a 230 kV power for delivery to the SCE Windhub and/or Westwind Substation.

This EIR has been prepared pursuant to the following:

- The California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.)
- CEQA *Guidelines* (California Code of Regulations, Title 14, Division 6, Article 1, Chapter 3, Section 15000 et seq.)
- The Kern County CEQA Implementation Document

The overall purposes of the CEQA process are to:

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

2.2 Purpose of this Environmental Impact Report

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

response to those comments, during the public hearing process. The final decision is made by the Board of Supervisors, who may approve, conditionally approve, or deny the project. The purpose of an EIR is to identify:

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

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

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

2.2.1 Issues to Be Resolved

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

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

2.3 Terminology

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

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

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

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

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

2.4 Decision-Making Process

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

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

- **Notice of Preparation/Initial Study (NOP/IS).** Kern County prepared and circulated a NOP/IS for 30 days to responsible, trustee, and local agencies for review and comment beginning on June 28, 2019, and ending on July 28, 2019.
- **Draft EIR Preparation/Notice of Completion (NOC).** A Draft EIR is prepared, incorporating public and agency responses to the NOP/IS and the scoping process. The Draft EIR is circulated for review and comment to appropriate agencies and additional individuals and interest groups who have requested to be notified of EIR projects. Per Section 15105 of the CEQA *Guidelines*, Kern County will provide for a 45-day public review period on the Draft EIR. Kern County will subsequently respond to each comment on the Draft EIR received in writing through a Response to Comments chapter in the Final EIR. The Response to Comments will be provided to each agency or person who provided written comments on the EIR a minimum of 10 business days before the scheduled Planning Commission hearing on the Final EIR and project.
- **Preparation and Certification of Final EIR.** The Kern County Planning Commission will consider the Final EIR and the project, acting in an advisory capacity to the Kern County Board of Supervisors. Upon receipt of the Planning Commission's recommendation, the Board of Supervisors will also consider the Final EIR, all public comments, and the project and take final action on the project. At least one public hearing will be held by both the Planning Commission and Board of Supervisors to consider the Final EIR, take public testimony, and then approve, conditionally approve, or deny the project.

2.4.1 Notice of Preparation/Initial Study

Pursuant to Section 15082 of the CEQA *Guidelines*, as amended, the Kern County Planning and Natural Resources Department circulated an NOP/IS to the State Clearinghouse, public agencies, special districts, and members of the public for a public review period beginning June 28, 2019, and ending on July 28, 2019. The NOP/IS was also posted in the Kern County Clerk's office for 30 days and sent to the State Clearinghouse at the Governor's Office of Planning and Research to solicit Statewide agency participation in determining the scope of the EIR.

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

2.4.2 Scoping Meeting

Pursuant to Section 15082(c)(1) of the CEQA *Guidelines*, for projects of statewide, regional, or area-wide significance, the lead agency is required to conduct at least one scoping meeting. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding, but not limited to, the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed. Kern County hosted a scoping meeting on July 19, 2019, at the Kern County Planning and Natural Resources Department, located at 2700 “M” Street, Suite 100, Bakersfield, California.

Notice of Preparation/Initial Study and Scoping Meeting Results

No verbal comments were received at the July 19, 2019, scoping meeting. Specific environmental concerns raised in written comments received during the NOP/IS public review period are discussed below. The NOP/IS and all comments received are included in Appendix A.

NOP Written Comments

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

TABLE 2-1: SUMMARY OF NOP/IS COMMENTS

Commenter/Date	Summary of Comment
State Agencies	
The California Department of Transportation Caltrans), District 9 July 17, 2019	The commenter suggests that as part of the environmental analysis the proposed project should analyze the intersection adequacy for construction phase vehicle turn movements, including median and lane queuing. Additionally, the commenter requests that cumulative impacts of the proposed and future projects toward eventual Purdy Road/State Route (SR) 14 improvements be addressed, as the 2003 Mojave Specific Plan Figure 6-1 shows this as a future grade separated intersection. The commenter also requests that the project meet the requirement for a Caltrans encroachment permit for work within State right of way, which would apply to Purdy Road/SR-14 improvements, any construction phase traffic control, and the gen-tie over SR-14 near Purdy Road.
Native American Heritage Commission (NAHC) July 23, 2019	The commenter states that the proposed project should comply with Senate Bill (SB) 18 and Assembly Bill (AB) 52, contact CA Native American Tribes and their representatives that are within the geographic area of the project and conduct consultations in accordance with SB 18 and AB 52, evaluate if the project will have an adverse impact on historical resources within the project area, contact appropriate regional archaeological information center for a record search, prepare an archaeological inventory survey (if required), contact the Native American Heritage Commission, and include mitigation measures for inadvertent discoveries of archaeological resources.
California Department of Conservation – Division of Oil, Gas and Geothermal Resources July 25, 2019	The commenter states that there are no known oil gas or geothermal wells located within the project boundary. If wells are encountered during project construction, the commenter requests that the Division of Oil, Gas and Geothermal Resources’ Inland district office is notified.

TABLE 2-1: SUMMARY OF NOP/IS COMMENTS

Commenter/Date	Summary of Comment
Local	
Kern County Planning and Natural Resources Department June 28, 2019	The commenter acknowledges the receipt of the NOP.
Kern County Public Works – Floodplain Management July 5, 2019	<p>The commenter states that a plan for the disposal of drainage waters originating onsite and from adjacent roadways should be prepared per the Kern County Development Standards and subject to approval of the Engineering, Surveying and Permit Services Department.</p> <p>Per the Kern County Floodplain Management Ordinance, associated flood hazard requirements will need to be incorporated into the design of the project.</p>
SoCalGas Transmission Technical Services July 16, 2019	The commenter states that the Transmission Department does not operate facilities within the proposed project; however, the Distribution Department of SoCalGas may maintain and operate facilities within the project scope and suggested that department be contacted.
Kern County Public Works Department – Administration and Engineering Division July 18, 2019	The commenter states that a traffic engineering study should be provided to the Kern County Public Works Department for review and comment.
Kern County Public Health Services – Environmental Health Division July 18, 2019	The commenter states that an account on the California Environmental Report System should be made for the project and the method of water supply and sewage disposal for the project would be approved by the Kern County Public Health Services – Environmental Health Division.
Mojave Air and Space Port July 19, 2019	The commenter states that due to the proximity of the project to the Mojave Air and Space Port (MHV), the project must discuss glare, land use compatibility, obstructions to navigable airspace, and cumulative impacts. The commenter states that a glare analysis should be prepared in accordance with the Federal Aviation Regulations (FAR) Technical Guidance for Evaluation Selected Solar Technologies on Airports. The proposed project compatibility with the adopted Kern County Airport Land Use Compatibility Plan should be discussed. Additionally, the commenter asks that the proposed project developer engage with MHV to analyze airspace conflicts in accordance with Title 14 of the Code of Regulations Part 77, Safe Efficient Use, and Preservation of the Navigable Airspace.
Antelope Valley – East Kern Water Agency (AVEK) July 24, 2019	The commenter states that AVEK does have an underground transmission pipelines running east-west through four easements of the northern boundary of the project site. Additionally, AVEK has an underground transmission pipeline running north-south on the west side of the freeway SR-14, which is within the interconnection study area for the proposed project. AVEK expresses concern for the integrity of their transmission pipelines and requests information on how the protection of those pipes during construction and during regular operations would be guaranteed. Additionally, AVEK requests to be contacted in order to obtain an agreement to cross their easements.

TABLE 2-1: SUMMARY OF NOP/IS COMMENTS

Commenter/Date	Summary of Comment
Interested Parties	
Russ Johnson July 9, 2019	The commenter states they are in favor of the proposed project.
Michael Branden July 9, 2019	The commenter states the proposed project would negatively impact their parcel and objects to the development of the project.
Michael Branden September 23, 2019	The commenter requests information on property adjacent to the proposed project, which could be affected by rendering part of their land for public access. Additionally, the commenter requests that for any section of land required by County for future construction of a public access road between APN# 428-030-32 and APN#: 428-174-36, be deducted as a setback from the northern site of the proposed project.
Clayton Gosmeyer October 9, 2019	The commenter states they are concerned with the proximity of the project site with their parcel, APN# 429-050-32. The commenter is concerned with the proposed project impairing the existing views of Lone Butte and other hills. The commenter also is concerned with the protection of existing Joshua trees.
Michael Branden October 28, 2019	The commenter states the proposed project would negatively impact the value of their property and would cut off access to their parcel. The commenter suggests moving perimeter fence back approximately 35' to allow for the construction of an access road.

2.4.3 Availability of the Draft EIR

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

Kern County Planning and Natural Resources Department

2700 "M" Street, Suite 100

Bakersfield, CA 93301-2370

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

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

Additionally, this EIR is available at the following libraries:

Kern County Library/Beale

Local History Room

701 Truxtun Avenue

Bakersfield, CA 93301

Kern County Library

Mojave Branch

16916 ½ Highway 14, Space D2,

Mojave, CA 93501

2.5 Format and Content

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

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

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

- Population and Housing;
- Recreation

The NOP/IS determined that the proposed project would have up to six permanent employees as the operations and maintenance building. Maintenance personnel would likely be drawn from the local labor force and would commute from their permanent residences to the project site during those times. However, even if the maintenance employees were hired from out of the area and had to relocate to eastern Kern County, it is expected that accommodations would be available in the nearby hotels in Rosamond, Mojave, Lancaster, or other local communities and would not result in a substantial increase in population in the area. Consequently, this would represent a minor increase in the number of users at local recreational facilities. As a result, the project would not directly or indirectly induce the development of any new housing or businesses, and there would not be a detectable increase in the use of parks or other recreational facilities. No impacts to population and housing or recreation would occur and no further analysis is warranted.

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

2.5.1 Required EIR Content and Organization

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

TABLE 2-2: REQUIRED EIR CONTENTS

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

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

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

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

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

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

2.6 Responsible and Trustee Agencies

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

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

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

2.6.1 Federal Agencies

- United States Fish and Wildlife Service (USFWS)
- Bureau of Land Management (BLM)
- Federal Aviation Administration (FAA)
- United States Army Corps of Engineers

2.6.2 State Agencies

- California Public Utilities Commission
- California Department of Fish and Wildlife (CDFW)
- Lahontan Regional Water Quality Control Board (RWQCB)
- California Department of Transportation (Caltrans)

2.6.3 Local Agencies

- Eastern Kern County Air Pollution Control District (EKAPCD)
- Kern County Board of Supervisors

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

2.6.4 Kern County

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

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

2.7 Incorporation by Reference

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

2.7.1 Kern County General Plan

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

2.7.2 Mojave Specific Plan

The Mojave Specific Plan was drafted in 2003 for the unincorporated eastern Kern County community of Mojave. The plan includes the following elements: land use; conservation; open space; circulation; housing and community development; noise; and seismic and safety. Within each of these element categories, purpose, scope, and content, existing setting, planning issues, element goals, element objectives and policies and implementation strategies for those policies are provided.

2.7.3 West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan was certified on March 30, 1992, for the community of West Edwards Road Settlement in order to recognize existing development and prepare for projected community growth. The preparation of the plan was required by the Land Use, Open Space, and Conservation Element of the Kern County General Plan. The plan includes the following elements: land use, open space, and conservation; circulation; and safety. Within each of these element categories, an existing setting, assumptions, issues, policies and implementation strategies for those policies are provided.

2.7.4 Kern County Zoning Ordinance

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

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

2.7.5 Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern Council of Governments (COG) and was adopted in August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and

cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. California's Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, calls for the Kern RTP to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas (GHG) emissions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low income housing need and transportation planning. Kern COG is a federally designated Metropolitan Planning Organization and a state designated Regional Transportation Planning Agency (RTPA). These designations formally establish Kern COG's role in transportation planning. Preparing an RTP is one of Kern COG's primary statutory responsibilities under federal and state law.

2.7.6 Kern County Airport Land Use Compatibility Plan

The Kern County Airport Land Use Compatibility Plan (ALUCP) was originally adopted in 1996 and has since been amended to comply with Aeronautics Law, Public Utilities Code (Chapter 4, Article 3.5) regarding public airports and surrounding land use planning. As required by that law, proposals for public or private land use developments that occur within defined airport influence areas are subject to compatibility review. The principal airport land use compatibility concerns addressed by the plan are: (1) exposure to aircraft noise, (2) land use safety with respect to both people and property on the ground and the occupants of aircraft, (3) protection of airport air space, and (4) general concerns related to aircraft overflights.

The ALUCP identifies policies and compatibility criteria for influence zones or planning area boundaries. The ALUCP maps and labels these zones as A, B1, B2, C, D and E, ranging from the most restrictive (A – airport property-runway protection zone) to the least restrictive (D – disclosure to property owners only) while the E zone is intended to address special land use development. According to the ALUCP, the project site is in the sphere of influence of the Mojave Air and Space Port. The northern project site is located in a medium density residential land use area and potentially in areas where development may have a significant impact on airport operations and flight safety. Specifically, the northern project site is located in Compatibility Zone C and Zone E1. Zone C prohibits schools, hospitals, nursing homes, and hazards to flights such as glare, sources of dust, steam or smoke which may impair pilot visibility, any use which may attract large flocks of birds, or any light which may cause visual discomfort or loss of orientation during critical phases of flight. Zone E1 encourages implementation of best management practices to abate bird attraction and prohibits development reaching 100 feet in height above ground level. However, private and public generator tie-in lines, collector lines and transmission lines are subject to review on a case-by-case basis and could be exempt from requirements.

2.8 Sources

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

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3.1 Introduction

This Environmental Impact Report (EIR) has been prepared by Kern County (County), which is the Lead Agency, to identify and evaluate potential environmental impacts associated with the construction and operation of the approximately 2,006-acre Sanborn Solar Project (project) proposed by Sanborn Solar LLC (project proponent/operator). The project proposes to develop a photovoltaic (PV) solar facility and associated infrastructure necessary to generate a combined 300 megawatts (MW) of renewable electrical energy and up to 3 gigawatt-hours (GWh) of energy storage capacity.

The proposed project consists of two discontinuous sites, each of which would contain solar and energy storage facilities, which together would comprise the project site. The northern site is approximately 1,041 acres and the southern site is approximately 965 acres. The project would be built in several phases. Each site has two options for interconnection. Interconnection Option 1 consists of a 230 kilovolt (kV) generation tie (gen-tie) constructed from an onsite project substation, located near Lone Butte Road, which would connect to existing transmission lines with connection equipment situated on up to 10 acres of land at the corner of United Street and Purdy Avenue, or travel west to the Southern California Edison (SCE) Windhub and/or Westwind Substation. Interconnection Option 2 consists of a 34.5 kV collection line constructed from the western limits of the project site near Lone Butte Road and travel west to a step-up conversion station. At the United Street step-up conversion station, the 34.5 kV power would be stepped-up to a 230 kV power for delivery to the SCE Windhub and/or Westwind Substation.

3.2 Project Location

The project is located in the south-eastern portion of Kern County in Central California, as shown in **Figure 3-1, Site Vicinity**. The project site is approximately 0.5 miles south of State Route 58 (SR-58) and approximately 1.5 miles east of SR-14. The nearest populated areas to the project site are the unincorporated community of Mojave, the unincorporated community of Rosamond, and the City of Tehachapi, which are approximately 1.5 miles northwest, 7.5 miles southeast, and 14 miles northwest of the project site, respectively.

The project site is bounded by SR-58 and the Mojave Air and Space Port to the north, open space to the east and the west, and Edwards Air Force Base (AFB) to the south, adjacent to the southernmost portion of the project site. The project would be accessed off of SR-58 and SR-14. The northern site would be accessed from gates off of a private access easement along the alignment of Lone Butte Road or 10th Street from SR-58 and the southern site would be accessed by Silver Queen Road or Reed Avenue from United Street off of SR-14.

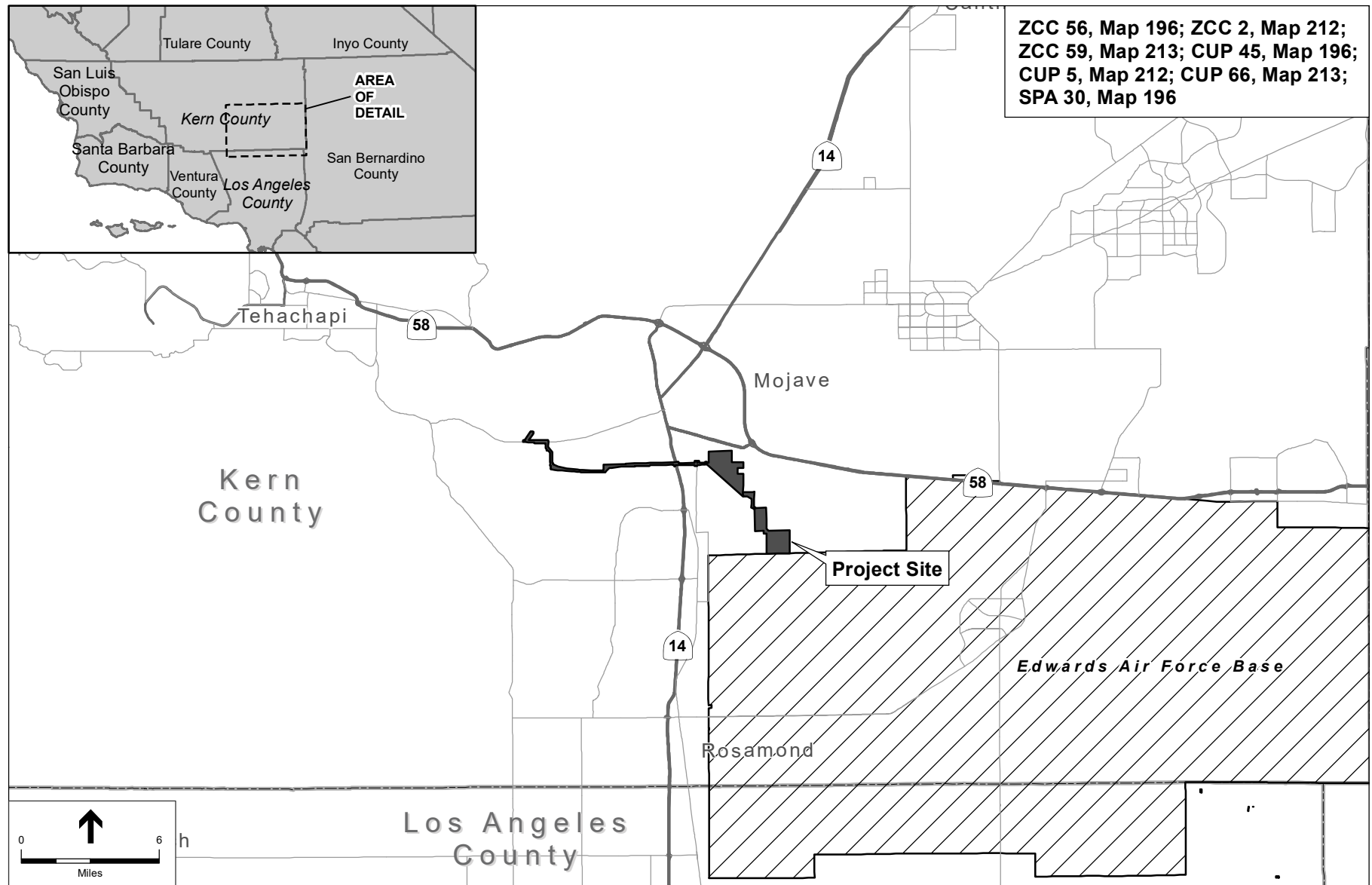


FIGURE 3-1: SITE VICINITY

As shown in **Figure 3-2, Project Boundary**, the proposed project consists of two discontinuous sites, each of which would contain solar and energy storage facilities, which together would comprise the project site. **Figure 3-3, Assessor Parcel Number Map**, shows the project site and its associated Assessor Parcel Numbers (APNs). As shown in **Figure 3-4, Northern Site**, and in **Figure 3-5, Southern Site**, the northern site is approximately 1,041 acres and the southern site is approximately 965 acres. **Figure 3-4a, Northern Site Plans – Part 1**, and **Figure 3-4b, Northern Site Plans – Part 2**, display the site plans for the northern and southern portions of the northern site, respectively. **Figure 3-5a, Southern Site Plans – Part 1**, and **Figure 3-5b, Southern Site Plans – Part 2**, display the site plans for the northern and southern portions of southern site, respectively. As shown on Figures 3-4a, 3-4b, 3-5a, and 3-5b, the proposed project consists of solar and energy storage facilities, which together would comprise the project site. The project site has two options for interconnection and the gen-tie facilities would be constructed within the study area shown on Figures 3-2 through 3-9.

- **Interconnection Option 1** – A 230 kV generation tie (gen-tie) constructed from an onsite project substation, located near Lone Butte Road, would connect to existing transmission lines with connection equipment situated on up to 10 acres of land at the corner of United Street and Purdy Avenue, or travel west to the SCE Windhub and/or Westwind Substation.
- **Interconnection Option 2** – A 34.5 kV collection line would be constructed from the western limits of the project site near Lone Butte Road and travel west to a step-up conversion station. At the United Street step-up conversion station, the 34.5 kV power would be stepped-up to a 230 kV power for delivery to the SCE Windhub and/or Westwind Substation.

The northern project site lies in the Sanborn and Mojave United States Geological Survey (USGS) 7.5-minute topographical quadrangles, and the southern project site lies in the Bissell USGS 7.5-minute topographical quadrangle. The entire project site is located in Sections 22, 23, 26, 27, 35, Township 11 North, Range 12 West (SBB&M), Section 1, Township 10 North, Range 12 West (SBB&M), and Section 7, Township 10 North, Range 11 West (SBB&M).

The project site consists of 15 total parcels that have been purchased, leased, or are in the process of purchase or lease acquisition by the project proponent. The APNs are summarized in **Table 3-1, Northern Project Site Assessor Parcel Numbers, Acreage, Specific Plan Map Codes, and Zoning**, and **Table 3-2, Southern Project Site Assessor Parcel Numbers, Acreage, Specific Plan Map Codes, and Zoning**. The project site is subject to provisions of the adopted Mojave Specific Plan, West Edwards Road Settlement Specific Plan, and the Kern County Zoning Ordinance. The project site is primarily designated for resources management and zoned agricultural.

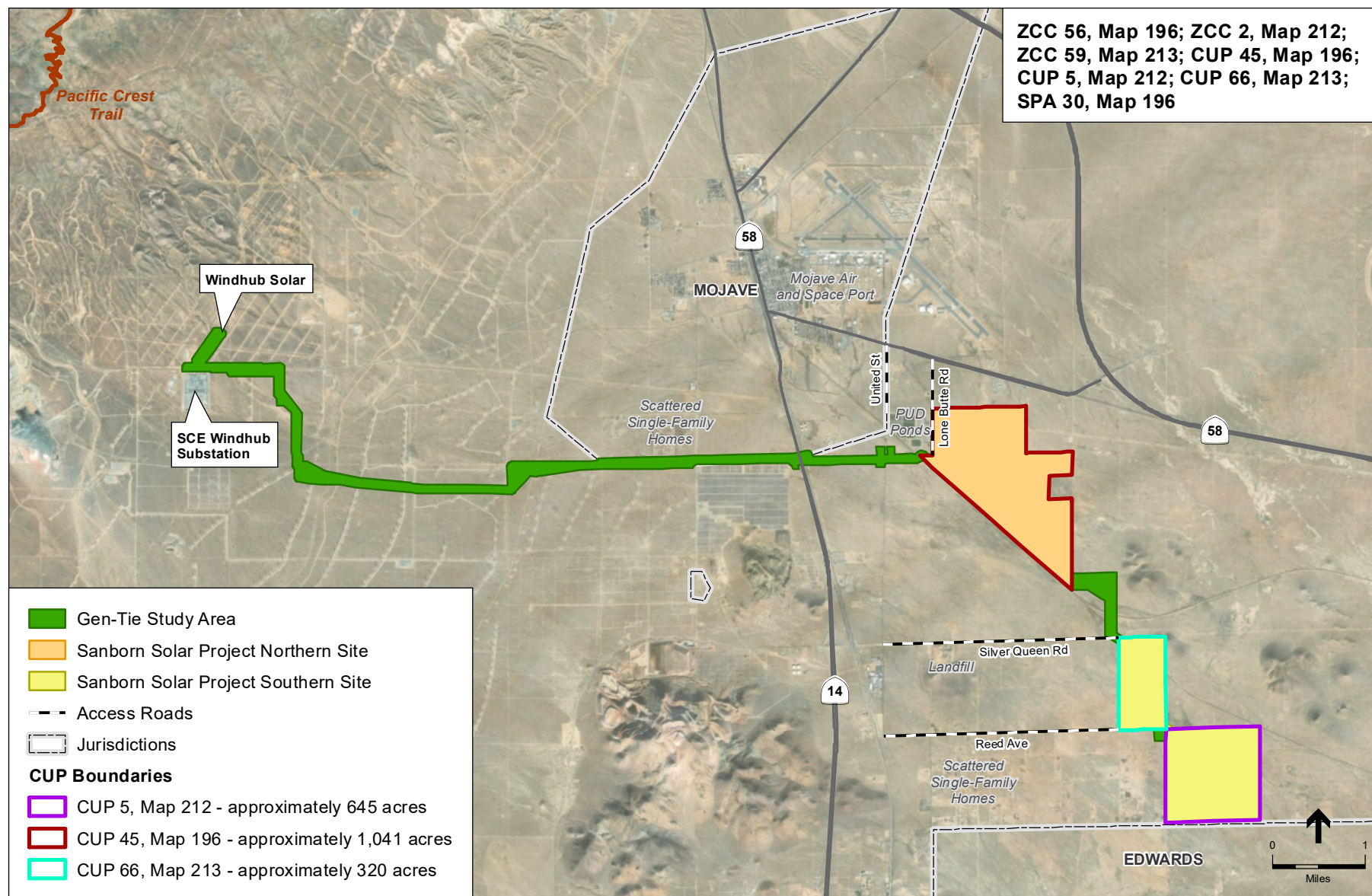


FIGURE 3-2: PROJECT BOUNDARY



KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT
SANBORN SOLAR PROJECT

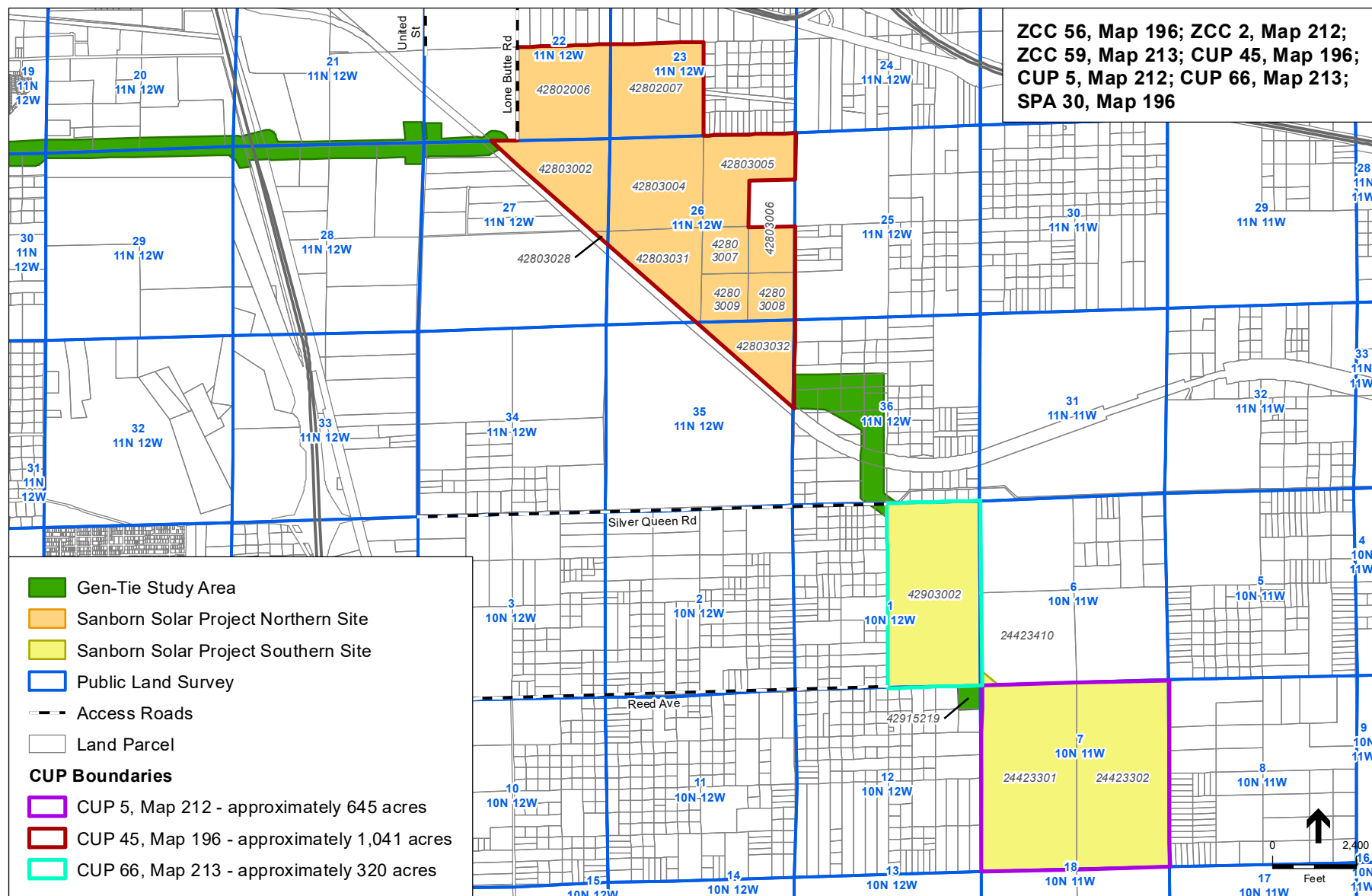


FIGURE 3-3: ASSESSOR PARCEL NUMBER MAP

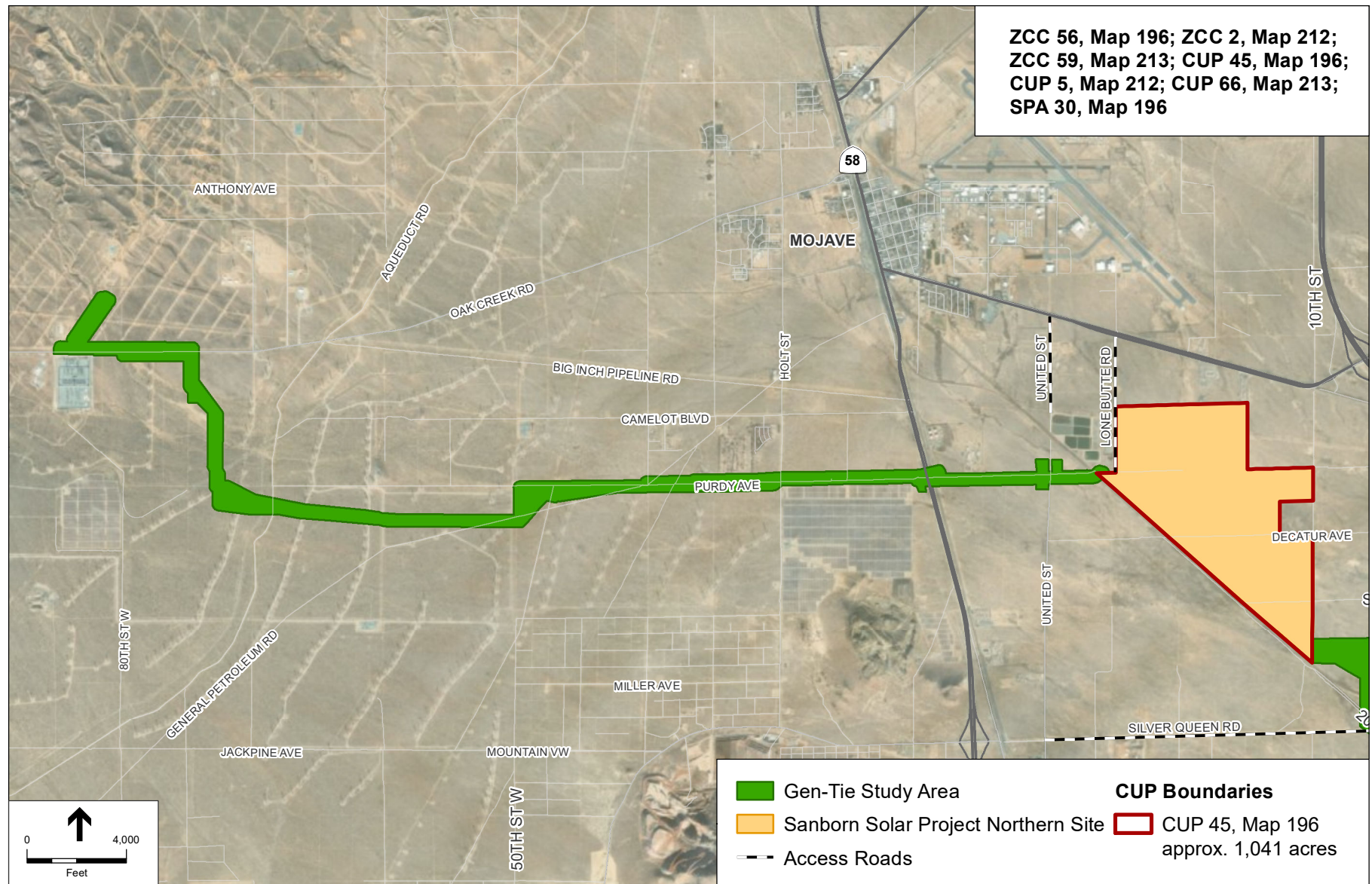


FIGURE 3-4: NORTHERN SITE



KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT
SANBORN SOLAR PROJECT

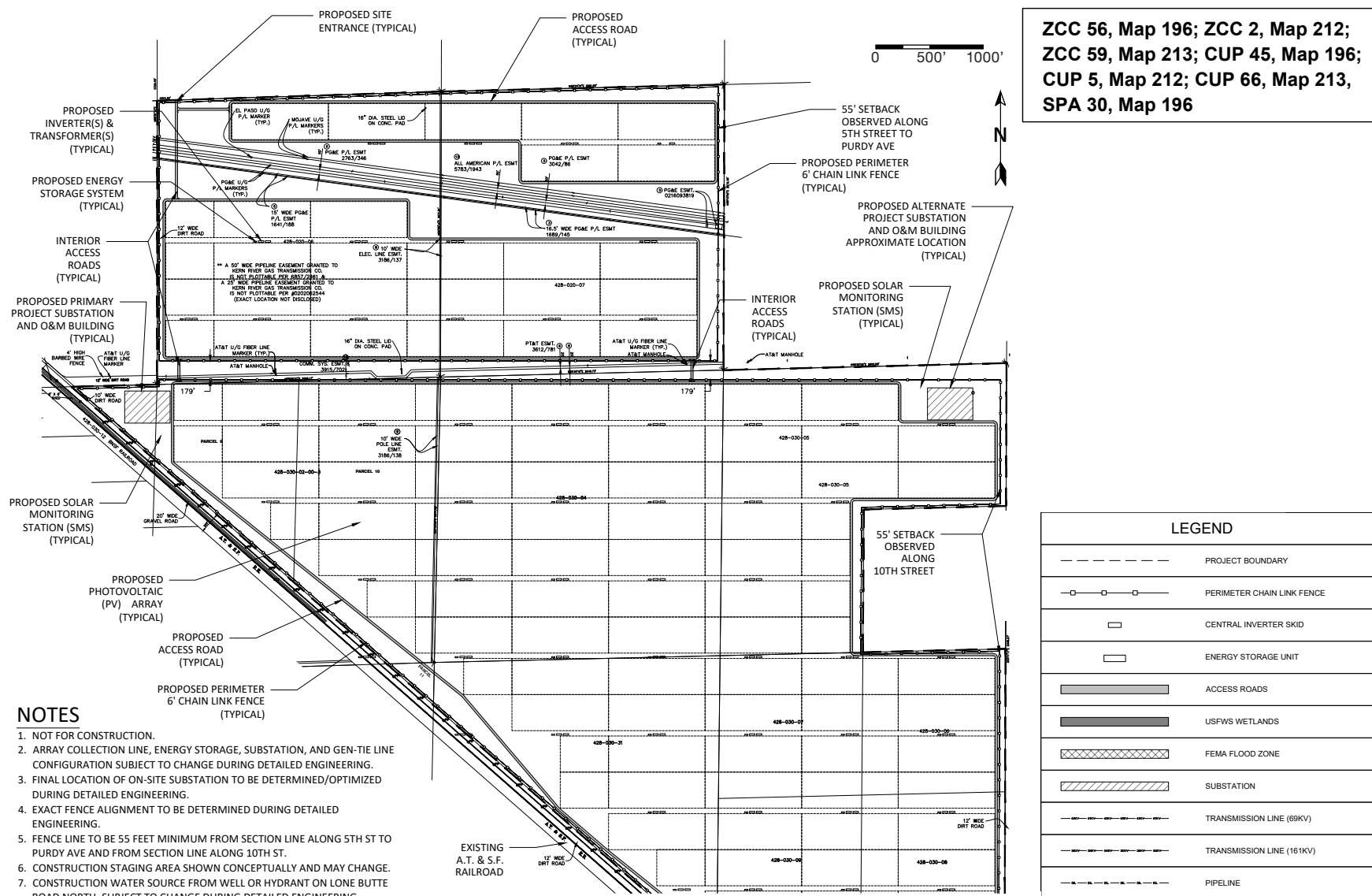
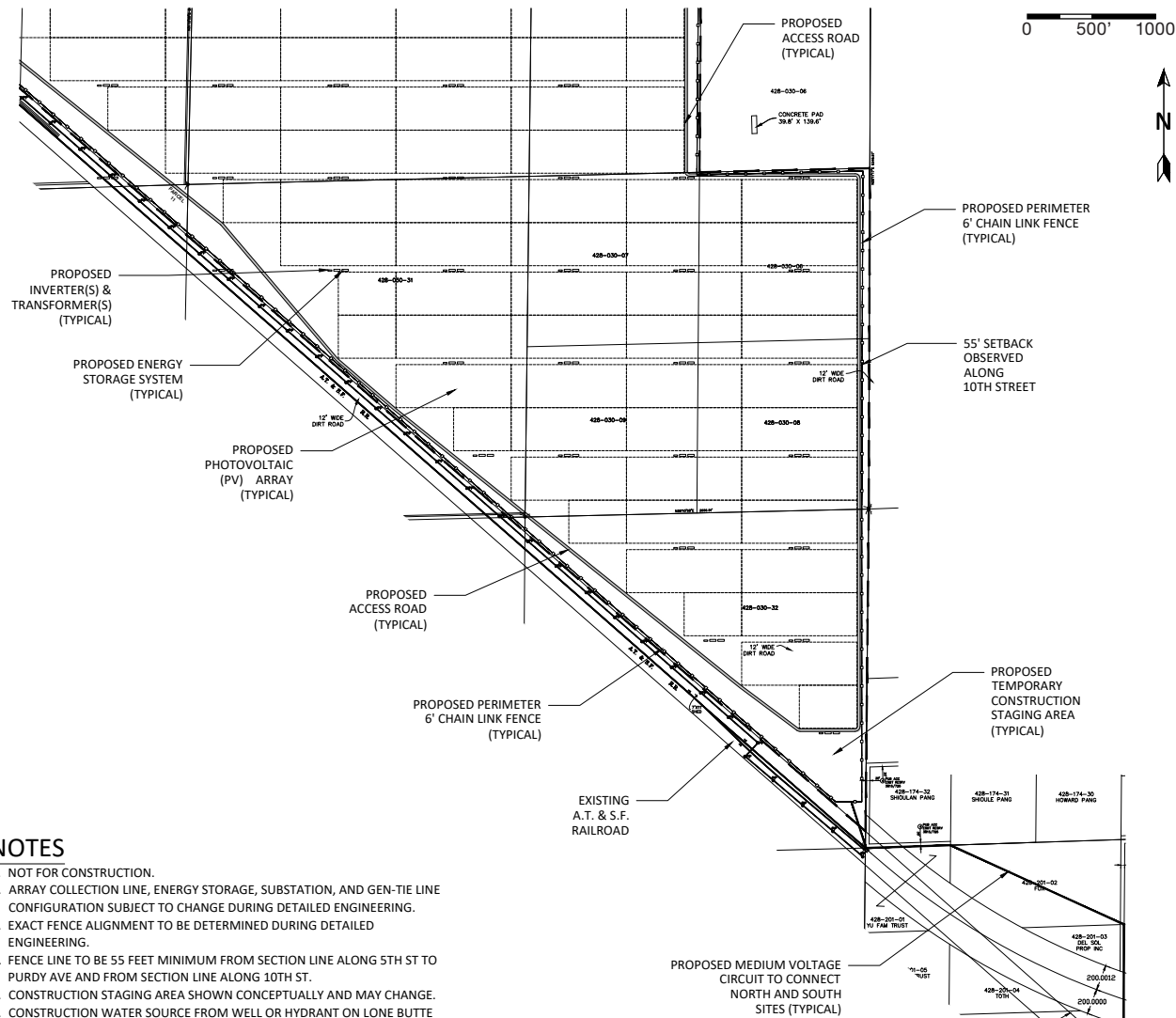


FIGURE 3-4A: NORTHERN SITE PLANS - PART 1



KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT
SANBORN SOLAR PROJECT



ZCC 56, Map 196; ZCC 2, Map 212;
ZCC 59, Map 213; CUP 45, Map 196;
CUP 5, Map 212; CUP 66, Map 213,
SPA 30, Map 196

NOTES

1. NOT FOR CONSTRUCTION.
2. ARRAY COLLECTION LINE, ENERGY STORAGE, SUBSTATION, AND GEN-TIE LINE CONFIGURATION SUBJECT TO CHANGE DURING DETAILED ENGINEERING.
3. EXACT FENCE ALIGNMENT TO BE DETERMINED DURING DETAILED ENGINEERING.
4. FENCE LINE TO BE 55 FEET MINIMUM FROM SECTION LINE ALONG 5TH ST TO PURDY AVE AND FROM SECTION LINE ALONG 10TH ST.
5. CONSTRUCTION STAGING AREA SHOWN CONCEPTUALLY AND MAY CHANGE.
6. CONSTRUCTION WATER SOURCE FROM WELL OR HYDRANT ON LONE BUTTE ROAD NORTH. SUBJECT TO CHANGE DURING DETAILED ENGINEERING.

LEGEND	
	PROJECT BOUNDARY
	PERIMETER CHAIN LINK FENCE
	CENTRAL INVERTER SKID
	ENERGY STORAGE UNIT
	ACCESS ROADS
	USFWS WETLANDS
	FEMA FLOOD ZONE
	SUBSTATION
	TRANSMISSION LINE (69KV)
	TRANSMISSION LINE (161KV)
	PIPELINE

FIGURE 3-4B: NORTHERN SITE PLANS - PART 2

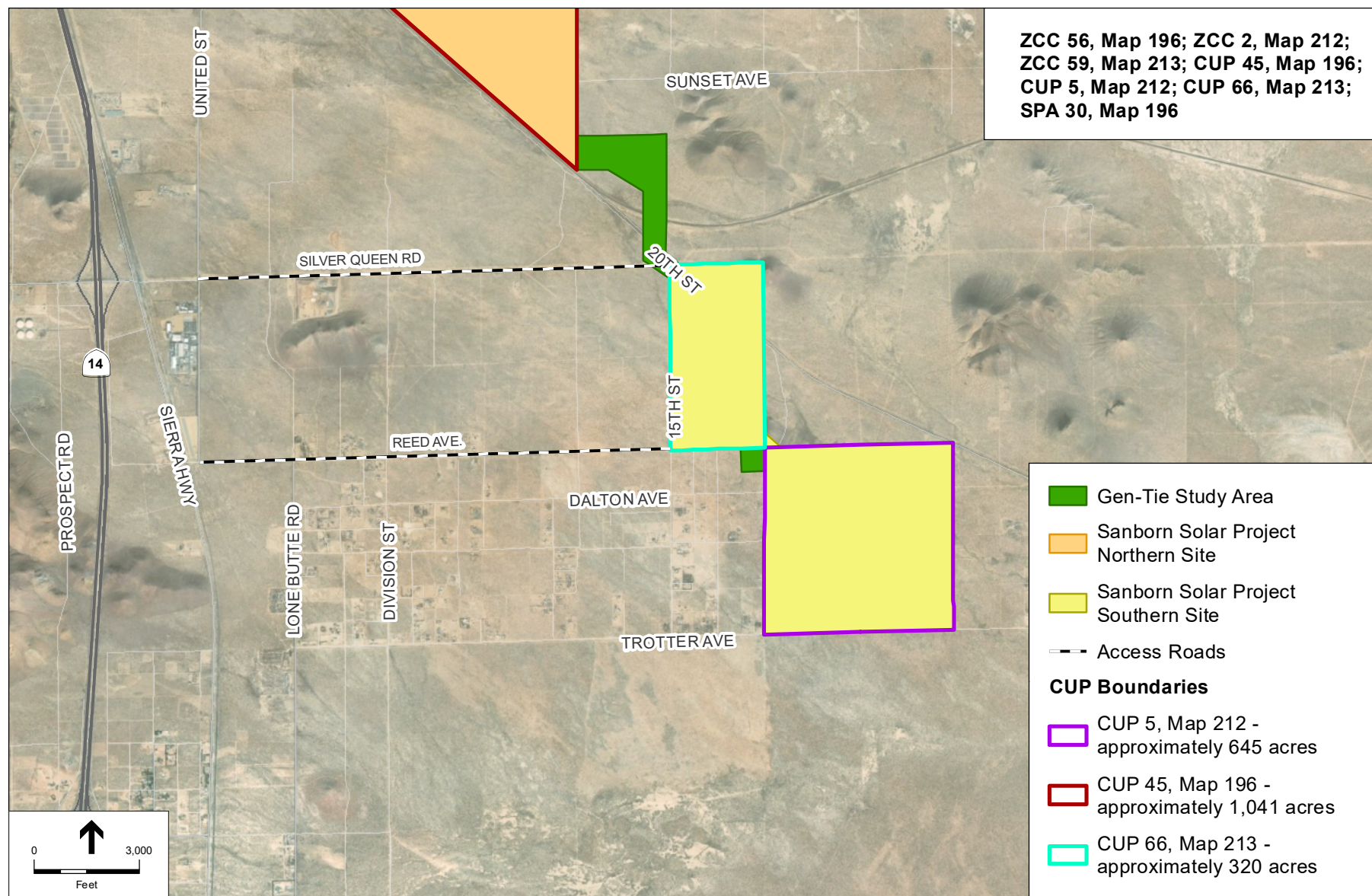


FIGURE 3-5: SOUTHERN SITE



KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT
SANBORN SOLAR PROJECT

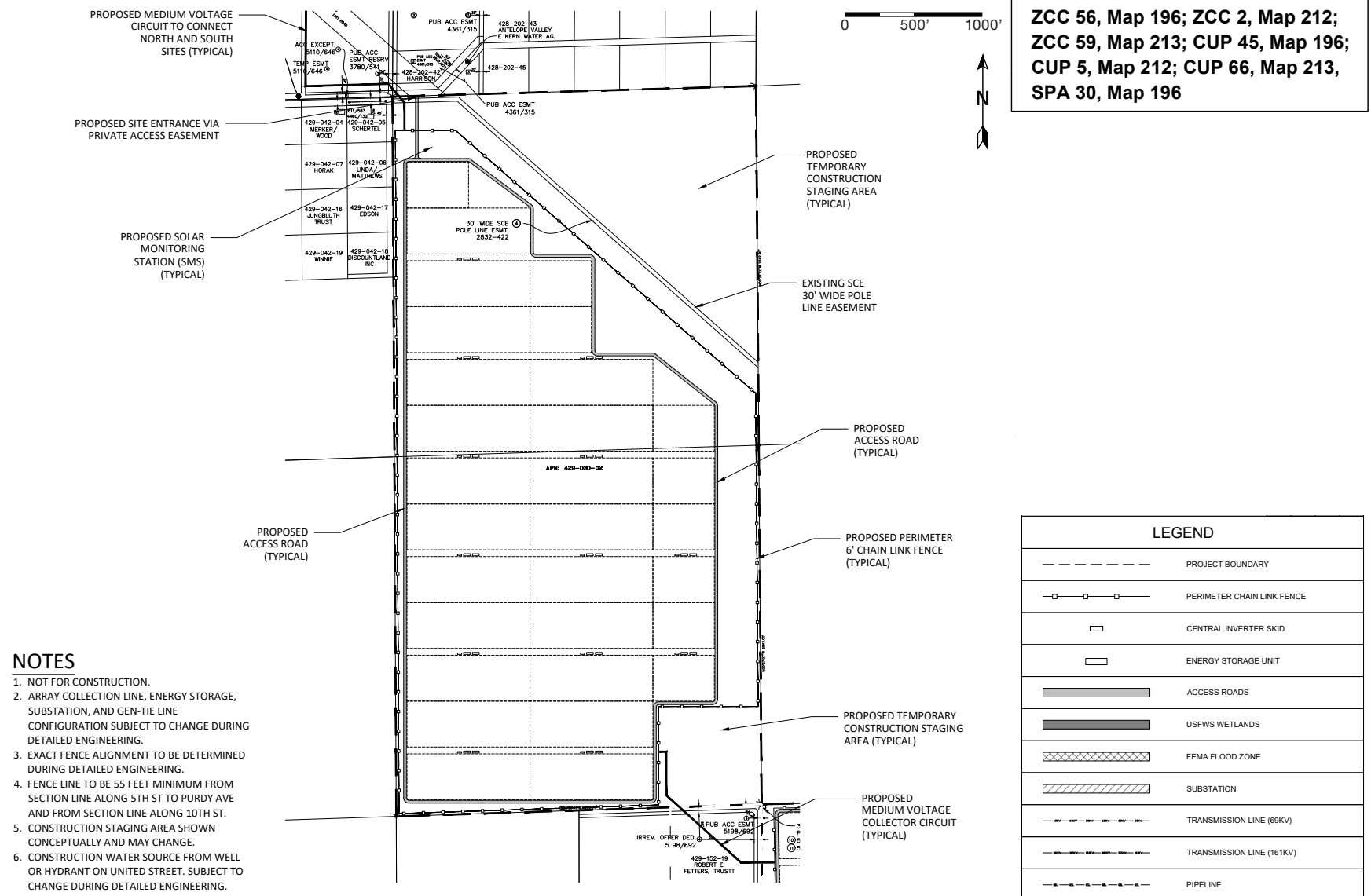


FIGURE 3-5A: SOUTHERN SITE PLANS - PART 1



KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT SANBORN SOLAR PROJECT

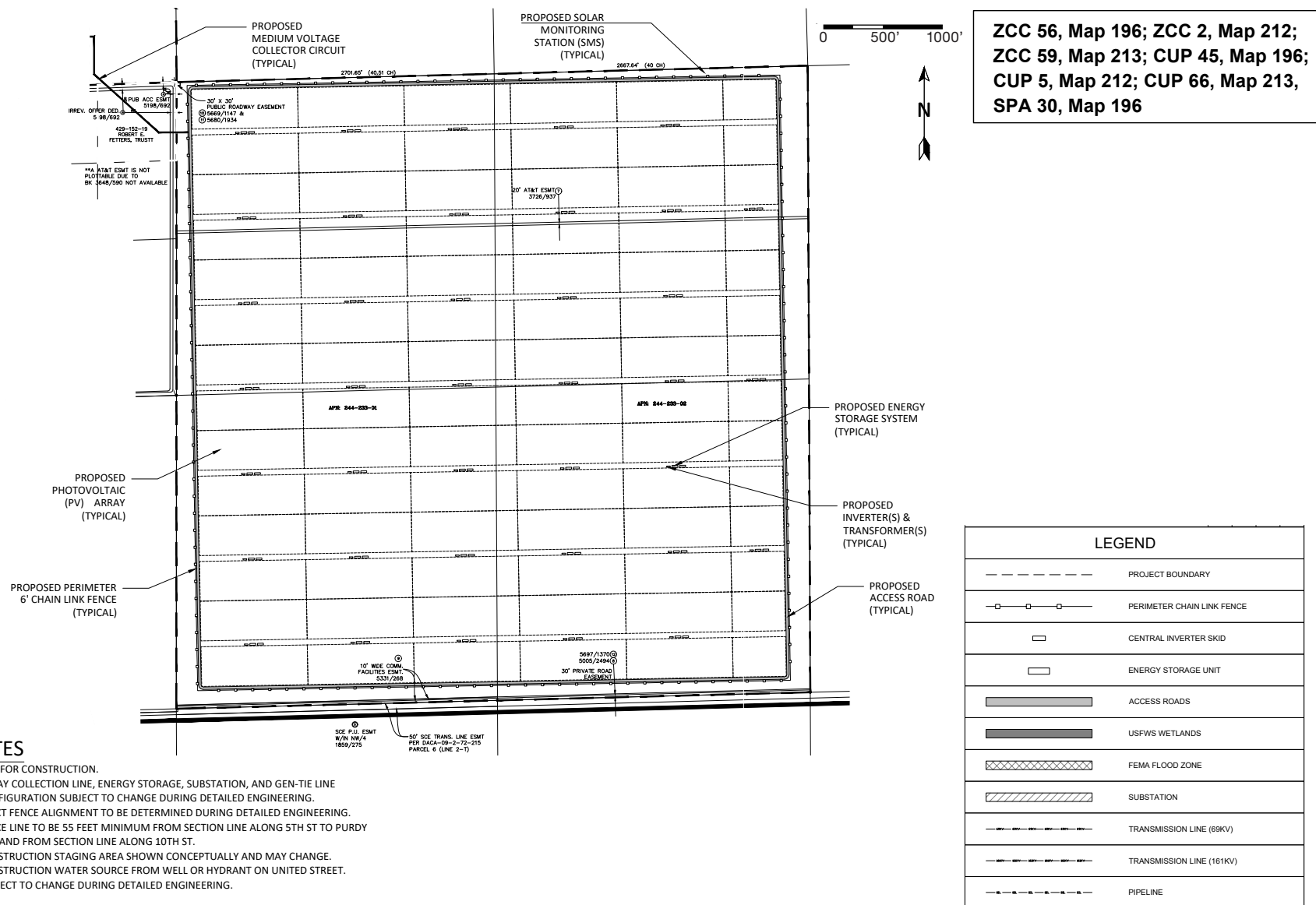


FIGURE 3-5B: SOUTHERN SITE PLANS - PART 2

TABLE 3-1: NORTHERN PROJECT SITE ASSESSOR PARCEL NUMBERS, ACREAGE, SPECIFIC PLAN MAP CODES, AND ZONING

APN	Acreage	Existing Specific Plan Designation	Zoning
428-020-06	160	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture)
428-020-07	160	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A-1 (Limited Agriculture); A-1 H (Limited Agriculture – Airport Approach Height Combining)
428-030-02	108.64	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture); A-1 (Limited Agriculture)
428-030-04	160	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture)
428-030-05	120	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A-1 (Limited Agriculture)
428-030-06	40	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture)
428-030-07	40	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture)
428-030-08	40	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture)
428-030-09	40	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture)
428-030-28	2.9	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture)
428-030-31	97.74	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture)
428-030-32	72.49	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A-1 (Limited Agriculture)

TABLE 3-2: SOUTHERN PROJECT SITE ASSESSOR PARCEL NUMBERS, ACREAGE, SPECIFIC PLAN MAP CODES, AND ZONING

APN	Acreage	Existing Specific Plan Designation	Zoning
244-233-01	325.48	<i>West Edwards Road Settlement Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size); and 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope)	A-1 (Limited Agriculture)
244-233-02	320	<i>West Edwards Road Settlement Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size); and 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope)	A-1 (Limited Agriculture)
429-030-02	320.17	<i>Northern Half of Parcel: Mojave Specific Plan</i> <i>Southern Half of Parcel: West Edwards Road Settlement Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size); and 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope)	A-1 (Limited Agriculture) A-1 FPS (Limited Agriculture – Floodplain Secondary)

3.3 Project Objectives

The proposed project would provide the State of California with a renewable energy source that would assist the State of California in complying with the Renewables Portfolio Standard (RPS) under Senate Bill (SB) 350 (2015), which requires that 50 percent of all electricity sold in the state to be generated from renewable energy sources by December 31, 2030. Senate Bill 100 was approved in September 2018 and would increase the RPS to a 100 percent goal by 2045.

The following is a list of project objectives:

- Establish a large-scale solar PV and energy storage power-generating facility of sufficient size and configuration to produce reliable electricity in an economically feasible and commercially financeable manner that can be marketed to different power utility companies.
- Develop a site that was partially previously disturbed (northern site) in proximity to transmission infrastructure in order to minimize environmental impacts.
- Use proven and established PV and energy storage technology that is efficient, requires low maintenance, and is recyclable.
- Maximize the use of existing transmission infrastructure.
- Ensure that the project can be constructed in a technologically feasible manner and operated in a manner that allows electricity to be provided at a competitive price.
- Assist Kern County in promoting its role as the State's leading producer of renewable energy;
- Provide green jobs to Kern County and the state of California;
- Site and design the project in an environmentally responsible manner consistent with current Kern County guidelines.
- Support California's efforts to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006, which requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under Senate Bill 32, which requires that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit by 2030.

3.4 Environmental Setting

3.4.1 Regional Setting

The project is located at the western edge of the Antelope Valley on lands that gradually slope downward from the northwest to the southeast. Elevations across the project site range from approximately 2,660 feet above mean sea level in the northwest portion of the site to approximately 2,500 feet above mean sea level in the southeast portion of the site. The topography of the project area is relatively flat as the project site is south of the Tehachapi Mountains, with the exception of scattered hills in the surrounding area up to approximately 200 feet in height. Desert vegetation dominates the region. Cities within the vicinity of the project site are the City of California City in Kern County and the Cities of Lancaster and Palmdale in Los Angeles County.

There are several proposed, existing, and permitted solar energy and transmission projects in the region where the project site is located. As shown in **Figure 3-6, *Surrounding Solar Projects***, the Edwards AFB Solar Project, located adjacent to the project's southern boundary, is currently in the planning stage. The High Desert Solar Project is immediately west of the project site and The RE Columbia Solar Project, RE Columbia Two Solar Project, RE Columbia Three Solar Project, and RE Rio Grande Solar Project, approximately 1.5 miles to the west, were approved in 2011 and are currently operational. The RE Clearwater Solar Project and RE Yakima Solar Project, approximately 1.8 miles to the northwest, was approved in 2014, but to date has not been constructed. The Windhub Solar Project, approximately 7 miles to the west, is currently under construction. The SEPV Solar Project, approximately 7.5 miles to the west, is currently operational.

3.4.2 Surrounding Land Uses and Project Site Conditions

Existing development in the project vicinity includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance facilities, mining, wind and solar energy, and meteorological towers. A portion of the Pacific Crest Trail (PCT) is approximately 3.16 miles north of the gen-tie line corridor, approximately 8.5 miles northwest of the northern site, and approximately 14.6 miles northwest of the southern site.

The community of Mojave is directly north of the site, including the Mojave Air and Space Port directly north of SR-58. The Burlington Northern Santa Fe (BNSF) Railway forms the western edge of the northern site and the gen-tie line crosses the BNSF Railway in two locations. The BNSF rail line separates the northern site and southern site with an embankment. The southern site is directly north of Edwards AFB.

The project site is not designated by the California Department of Conservation (DOC) as prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The DOC designates the project site as “Nonagricultural and Natural Vegetation”, “Grazing Land”, and “Vacant or Disturbed Land” (DOC, 2018). APN 429-030-02, which is approximately 320 acres of the project site, is within the Kern County Agricultural Preserve Number 24 boundary.

Private land within locally designated agricultural preserve areas are eligible for enrollment under a Williamson Act contract. Participation in the Williamson Act program, which is voluntary for landowners, is dependent on a County’s willingness to adopt and implement the program. The rules of each agricultural preserve specify the allowed uses. Local governments may identify compatible uses that can be permitted under a use permit (DOC, 2015); which the County does by way of its Exclusive Agriculture zone. Additionally, California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve.

Therefore, the proposed project would be compatible with the Kern County Agriculture Preserve No. 24. Further, there are no parcels within the project site that are under any Williamson Act contracts or being used for agriculture.

The majority of the project site is not located within a Federal Emergency Management Agency (FEMA) designated flood zone. However, there are portions of both the northern and southern project site within FEMA Zone A, indicating those areas are within the 100-year floodplain as depicted in **Figure 3-7, *FEMA Flood Zone Hazard***.

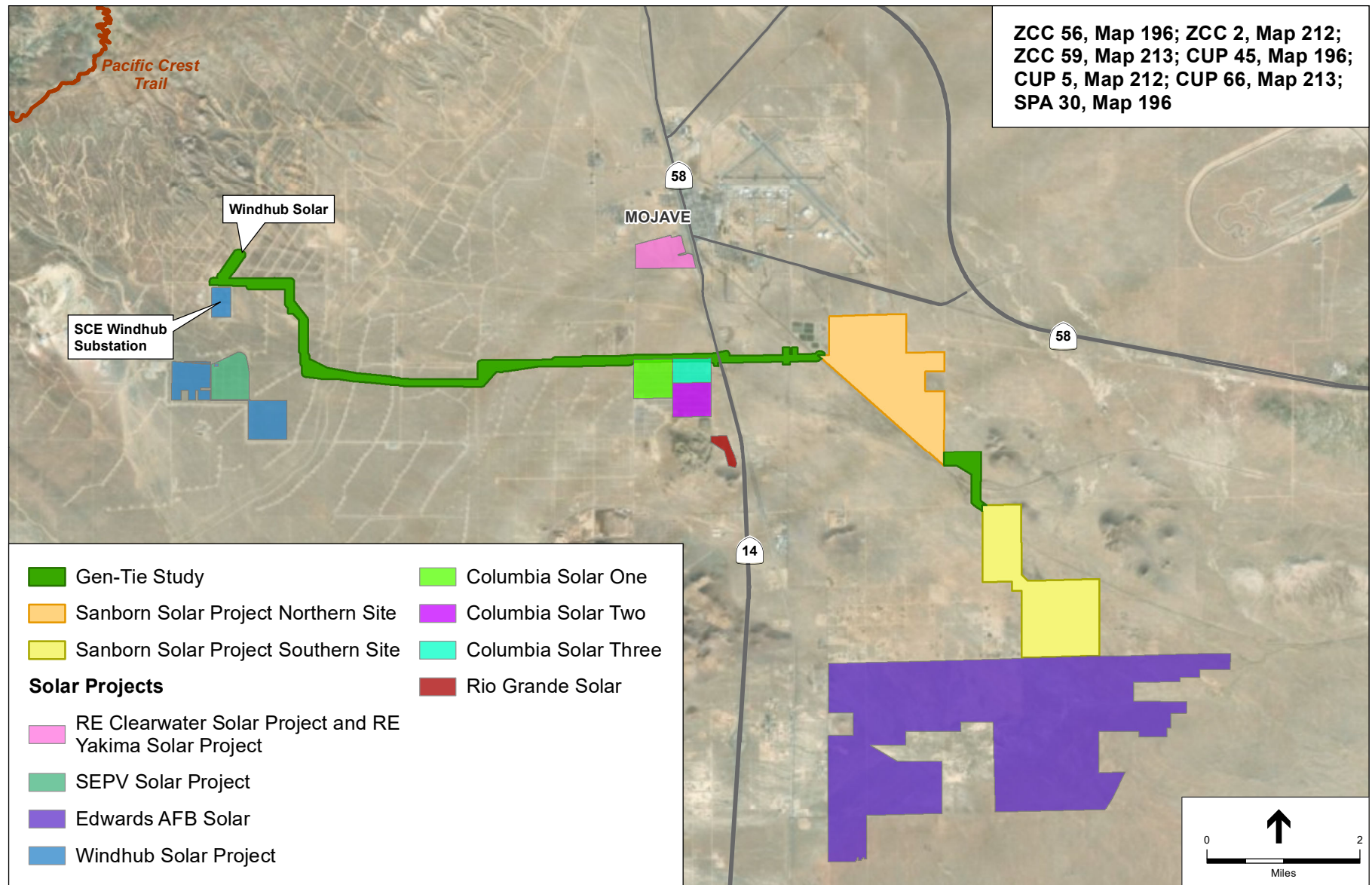


FIGURE 3-6: SURROUNDING SOLAR PROJECTS

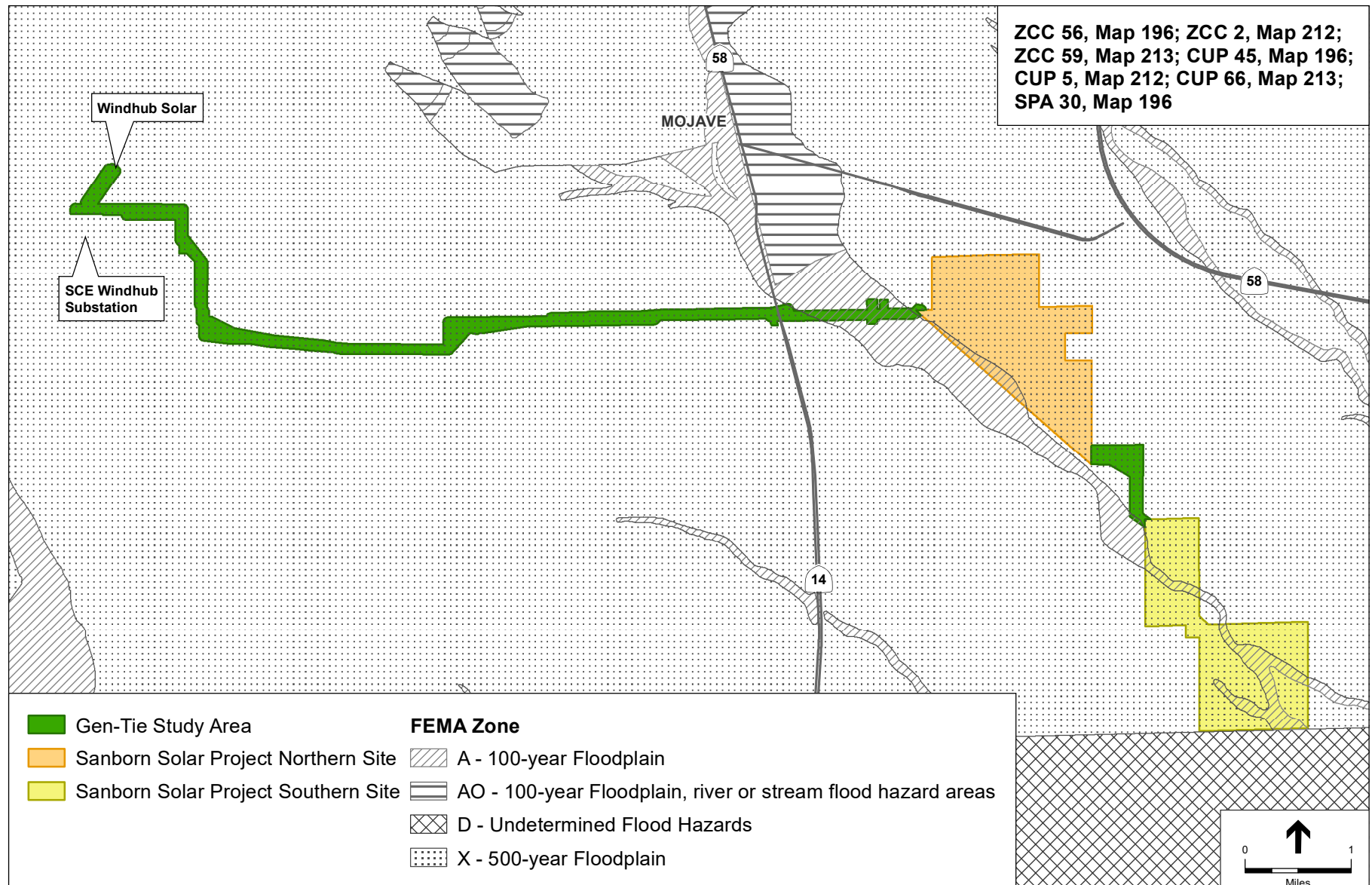


FIGURE 3-7: FEMA FLOOD ZONE HAZARD

Based on a review of records maintained by the California Department of Conservation/Division of Oil, Gas and Geothermal Resources (DOGGR), wells were not identified on the project site (<https://maps.conservation.ca.gov/doggr/wellfinder/#close>). Records maintained by the Kern County Assessor indicated there is one Mineral Rights APN within the boundaries of the project site.

The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and criteria by which the County can address compatibility issues when making planning decisions concerning airports and military aviation operations. The proposed solar facility would be located within the Airport Influence Areas of the Mojave Air and Space Port, which is operated by the East Kern Airport District (EKAD) and within the vicinity of Edwards AFB, which is a military aviation installation. Section 4.9 of the ALUCP addresses the Mojave Air and Space Port and land uses and procedures relative to its aviation and including height restrictions, and other compatibility criteria. In addition, Section 4.17.3 of the ALUCP requires that the Edwards AFB be notified of development that falls within identified notification categories. **Figure 3-8, ALUCP in Relation to the Project Site**, shows the project site and its vicinity, with respect to the ALUCP zones.

The project would be served by the Kern County Sheriff's Office (KCSO) for law enforcement and public safety, Kern County Fire Department (KCFD) for fire protection, and Kern County Medical Emergency Service for emergency medical and rescue services. The closest KCSO Substation is the Mojave Substation located approximately 1.5 miles northwest of the northern site at 1771 SR-58 in the community of Mojave. The nearest KCFD fire station that would serve the project is Station No. 14 (Mojave), located at 1953 SR-58 in the community of Mojave, approximately 1.8 miles northwest of the project site. The nearest hospitals are the Antelope Valley Hospital, in the City of Lancaster, approximately 20 miles to the south and the Tehachapi Hospital, in the City of Tehachapi, approximately 18.5 miles to the northwest. The nearest school to the project site is Mojave High School, located approximately 2 miles northwest in the community of Mojave.

3.5 Land Use and Zoning

3.5.1 Kern County General Plan, Mojave Specific Plan, and West Edwards Road Settlement Specific Plan

The project site is located within unincorporated Kern County and within the administrative boundaries of both the Mojave Specific Plan and West Edwards Road Settlement Specific Plan areas. The project site is designated as Mojave Specific Plan Map Codes 8.5 (Resource Management – Minimum 20-Acre Size) and 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope). A portion of the project is designated as West Edwards Road Settlement Specific Plan Map Code 8.5 (Resource Management – Minimum 20-Acre Size). The existing General Plan designations are shown in **Figure 3-9, General Plan and Land Use Designations**. The existing Mojave Specific Plan and West Edwards Road Settlement Specific Plan designations are shown in **Figure 3-10, Existing Mojave Specific Plan and West Edwards Road Settlement Specific Plan Designation**.

The project also includes a request for an amendment to the Circulation Element of the Mojave Specific Plan to eliminate the future road reservation of Purdy Avenue, from United Street to Fifth Street, as shown on **Figure 3-11, Mojave Specific Plan Amendment**.

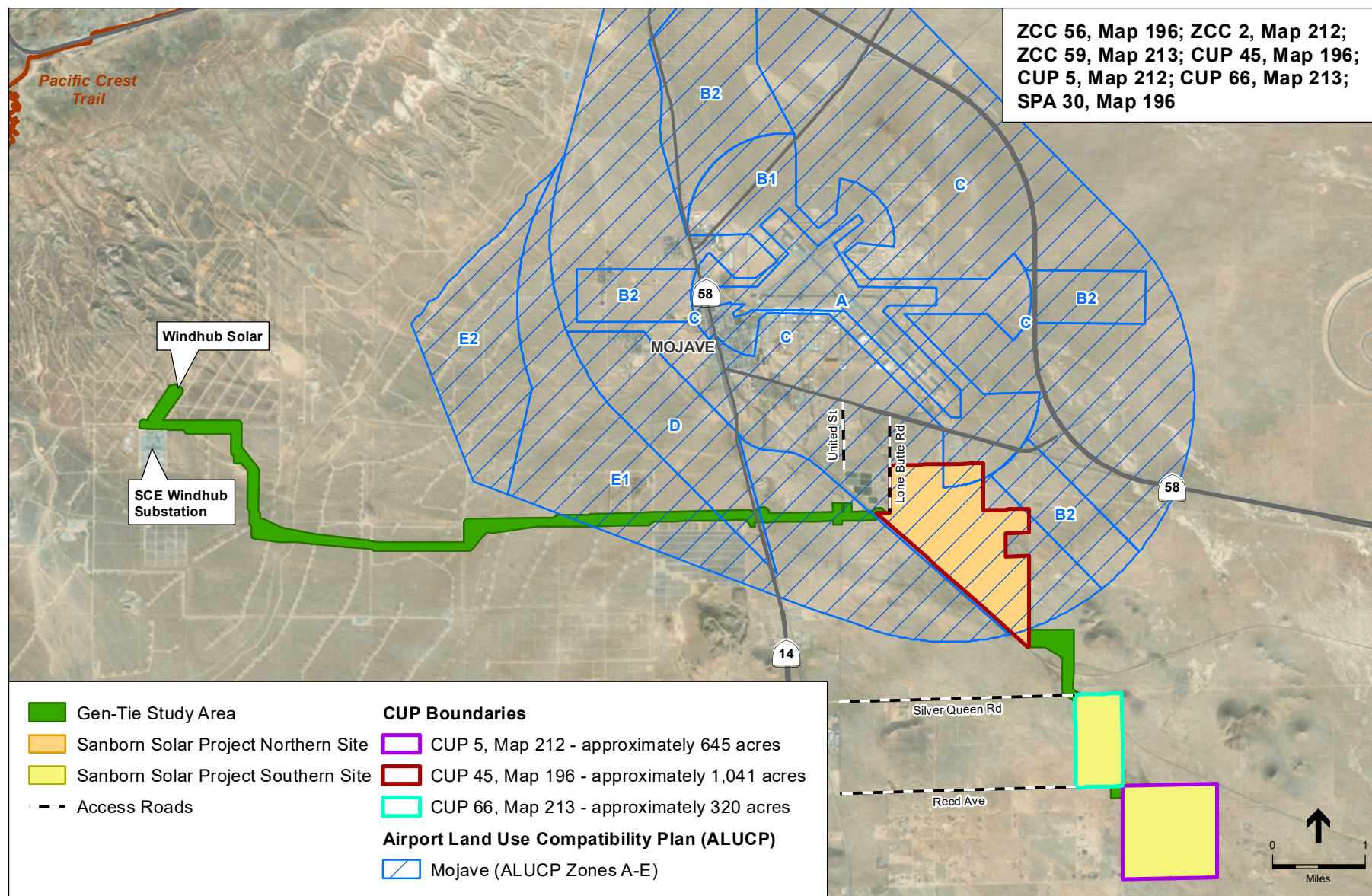


FIGURE 3-8: ALUCP IN RELATION TO THE PROJECT SITE



KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT
SANBORN SOLAR PROJECT

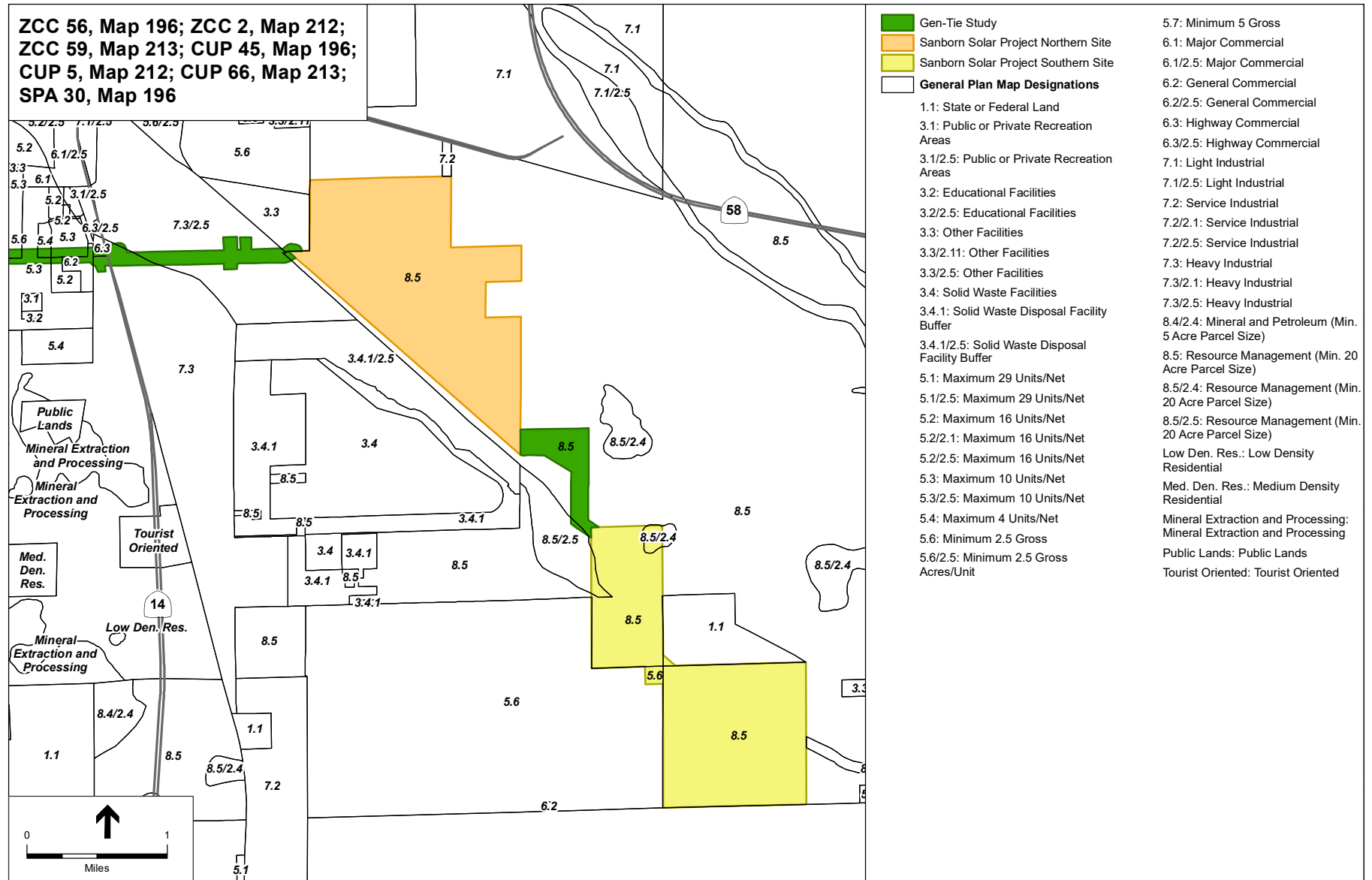


FIGURE 3-9: GENERAL PLAN AND LAND USE DESIGNATIONS



FIGURE 3-10: EXISTING MOJAVE SPECIFIC PLAN AND WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN DESIGNATION



KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT
SANBORN SOLAR PROJECT

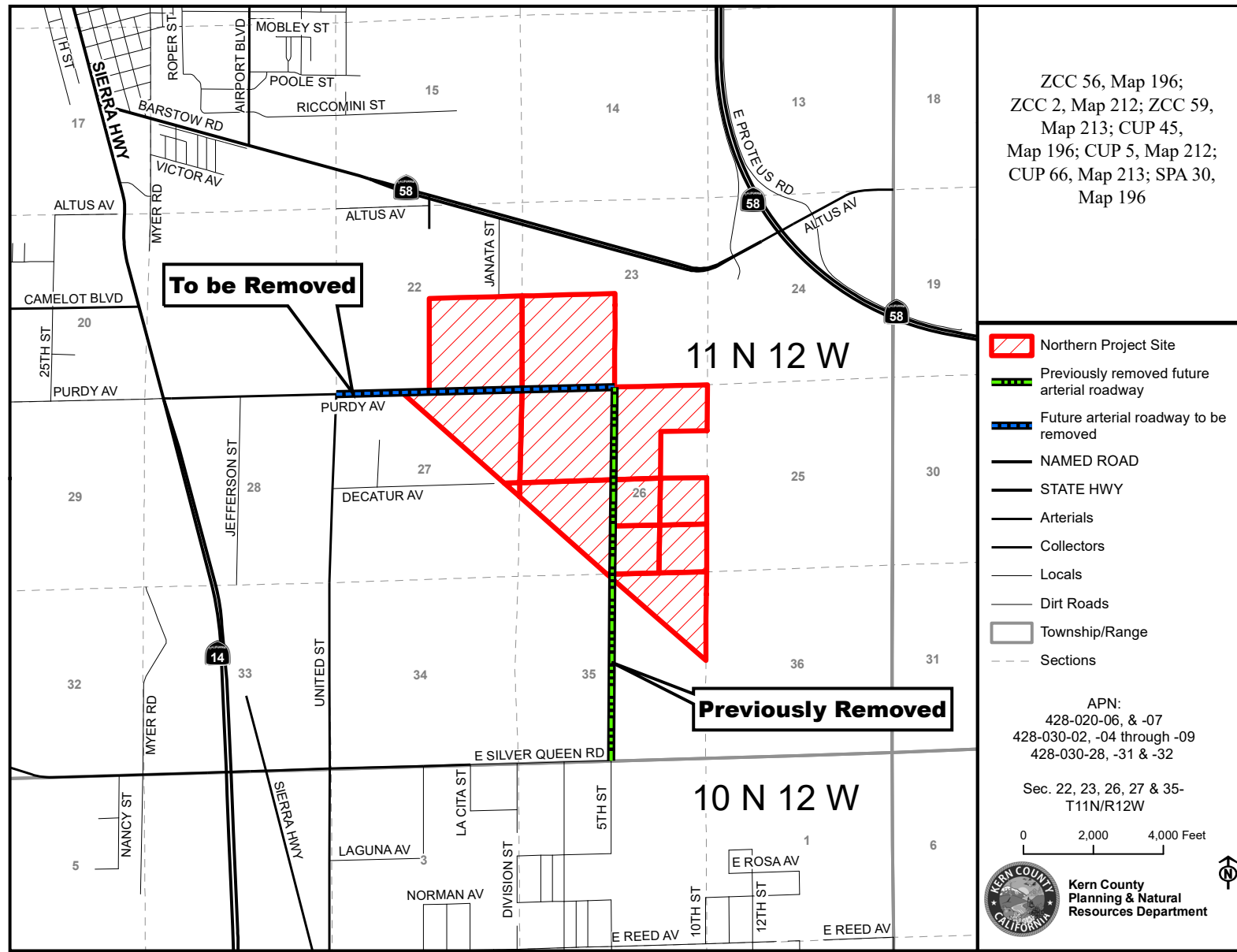


FIGURE 3-11: MOJAVE SPECIFIC PLAN AMENDMENT

3.5.2 Kern County Zoning Ordinance

The Kern County Zoning Ordinance designates the project site as zoned A (Exclusive Agriculture), A-1 (Limited Agriculture), and A-1 H (Limited Agriculture – Airport Approach Height Combining). The project site would be rezoned to A or A H, with the exception of those portions which are already in the A Zone District. According to the Kern County Zoning Ordinance Section 19.12.030 G, solar energy electrical generators, when not accessory to a permitted or conditionally permitted use, are permitted within the A Zone District subject to the approval of a Conditional Use Permit (CUP). The proposed zoning classifications of the project site are consistent with the current Mojave Specific Plan and West Edwards Road Settlement Specific Plan Map Code designations, as solar energy-generating facilities are an allowable use under the 8.5 (Resource Management – Minimum 20-Acre Size) designation. The existing zoning designations are as specified in **Table 3-3, Project Site and Surrounding Land Uses**, and depicted in **Figure 3-12, Existing Zoning**, and **Figure 3-13, Proposed Zoning**.

The project is sited directly north of the Edwards Air Force Base and is within the Joint Service Restricted R-2508 Complex. This restricted airspace allows flying missions at the Edwards Air Force Base and China Lake Naval Weapons Station by go beyond the boundaries of the installations and fly at lower elevations within the Complex. Also, the Kern County Zoning Ordinance, Section 19.08.160, describes U.S. military review requirements for proposed structures occurring within the vicinity of a military flight zone in order to ensure that projects within Kern County do not conflict with military flight test pathways.

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TABLE 3-3: PROJECT SITE AND SURROUNDING LAND USES

	Existing Land Use	Existing Map Code Designation	Existing Zone Classification
Project Site	Northern Site	Undeveloped <i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture) A-1 (Limited Agriculture) A-1 H (Limited Agriculture -Airport Approach Height Combining)
	Southern Site	Undeveloped <i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size) <i>West Edwards Road Settlement:</i> 8.5 (Resource Management – Minimum 20-Acre Size); 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope)	A-1 (Limited Agriculture) A-1 FPS (Limited Agriculture – Flood Plain Secondary Combining)
Surrounding Lands	North	Mojave Air and Spaceport; Scattered single-family homes; Scattered commercial; and Undeveloped Vacant Open Space	3.3/2.11 (Other Facilities/Burn Dumps) 6.2 (General Commercial) 7.1 (Light Industrial) A-1 (Limited Agriculture) A-1 H (Limited Agriculture -Airport Approach Height Combining) M-1 PD (Light Industrial- Precise Development) M-1 PD FPS (Light Industrial, Precise Development, Floodplain Secondary Combining) M-1 PD H (Light Industrial, Precise Development, Airport Approach Height Combining) M-2 PD H (Light Industrial, Precise Development, Airport Approach Height Combining) MP (Mobilehome Park)
	East	Undeveloped Vacant Open Space	1.1 (State or Federal Land) 3.3 (Other Facilities) 8.5 (Resource Management – Minimum 20-Acre Size); 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope) A-1 (Limited Agriculture) A-1 H (Limited Agriculture – Airport Approach Height Combining)
	South	Edwards Air Force Base; Undeveloped	1.1 (State or Federal Land) A-1 (Limited Agriculture)

TABLE 3-3: PROJECT SITE AND SURROUNDING LAND USES

	Existing Land Use	Existing Map Code Designation	Existing Zone Classification
Surrounding Lands	West Scattered single-family homes; Scattered commercial; Landfill; PUD Ponds; and Undeveloped Vacant Open Space	3.3 (Other Facilities)	A (Exclusive Agriculture)
		3.4 (Solid Waste Disposal Facility)	A FPS (Exclusive Agriculture – Floodplain Secondary)
		3.4.1 (Solid Waste Disposal Facility Buffer)	A-1 (Limited Agriculture)
		7.3/2.5 (Heavy Industrial -Flood Hazard)	A-1 MH (Limited Agriculture – Mobile Home)
		5.6 (Residential – Minimum 2.5 Gross Acres/DU)	A-1 FPS (Limited Agriculture – Flood Plain Secondary)
		8.5 (Resource Management – Minimum 20-Acre Size)	A WE (Exclusive Agriculture – Wind Energy)
			MP (Mobilehome Park)
			E (2½) RS MH (Estate 2.5 Acres – Residential Suburban – Mobile Home)
			E (5) RS (Estate 5 Acres – Residential Suburban)
			E (10) RS MH (Estate 10 Acres – Residential Suburban – Mobile Home)
			M-2 PD (Medium Industrial – Precise Development)
			M-3 PD (Heavy Industrial – Precise Development)
			M-3 PD FPS (Heavy Industrial – Precise Development – Floodplain Secondary)





3.6 Proposed Project

The proposed project would include the development a solar facility and associated infrastructure with the capacity to generate up to 300 MW of renewable electric energy, including 3 GWh of energy storage facilities, on 2,006 acres of privately-owned land in the southern portion of Kern County, directly south of the community of Mojave.

Since the circulation of the Initial Study/Notice of Preparation, there are have been changes to the Project Description. These changes include:

Revisions

- To change the total project acreage from 2,102 acres to 2,006 acres.
- To change Zone Change Case No. 59, Map No. 213 (Zone Change from A-1 to A) for 320 acres, rather than 338 acres.
- To issue Conditional Use Permit No. 45, Map No. 196 (solar facility) for 1,041 acres, rather than 1,118 acres.
- To issue Conditional Use Permit No. 66, Map No. 213 (solar facility) for 320 acres, rather than 338 acres.
- To change Interconnection Option 1 – an onsite project substation, located near Lone Butte Road, would connect to an existing transmission lines with connection equipment situated on up to 10 acres of land (increased from 5 acres) at the corner of United Street and Purdy Avenue.

Additions

- To amend the Circulation Element of the Mojave Specific Plan to remove a portion of the designated, but not constructed, arterial roadway of Purdy Avenue from United Street to Fifth Street.

The proposed project consists of the following requests:

- The proposed project requests the following changes to the zoning classification in the zoning code:
 - Zone Change Case No. 56, Map No. 196 (Zone Change from A-1 to A and from A-1 H to A H) – approximately 461 acres
 - Zone Change Case No. 2, Map No. 212 (Zone Change from A-1 to A) – approximately 645 acres
 - Zone Change Case No. 59, Map No. 213 (Zone Change from A-1 to A and from A-1 FPS to A FPS) – approximately 320 acres
- The project proponent is requesting three CUPs to allow for the construction and operation of a PV solar facility and associated infrastructure necessary to generate 300 MW of renewable electrical energy and/or energy storage capacity, as follows:
 - Conditional Use Permit No. 45, Map No. 196 (solar facility and energy storage) – approximately 1,041 acres
 - Conditional Use Permit No. 5, Map No. 212 (solar facility and energy storage) – approximately 645 acres
 - Conditional Use Permit No. 66, Map No. 213 (solar facility and energy storage) – approximately 320 acres

- The proposed project is requesting to amend the Circulation Element of the Mojave Specific Plan to remove a portion of the designated, but not constructed, arterial roadway of Purdy Avenue from United Street to Fifth Street:
 - Specific Plan Amendment No. 30, Map No. 196 (Circulation Element)

Figure 3-2 shows the boundaries of the proposed project. With the requested zone change, the entirety of the project would be zoned A (Exclusive Agriculture) and A H (Exclusive Agriculture – Airport Approach Height Combining). Therefore, pursuant to Chapter 19.12.030.G, CUPs are required to allow for the construction and operation of the PV solar facility under this zoning.

As shown on Table 3-1 and Table 3-2, the proposed solar facility consists of 15 parcels. The proposed project consists of two development areas that comprise the project site and would be built in several phases pending power purchase agreements. The facilities would be designed to produce up to a combined 300 MW of solar power at the point of interconnection to the transmission grid with up to 3 GWh of energy storage capacity. The northern site would produce approximately 155 MW and the southern site would produce approximately 145 MW. The project would have the following options for interconnection:

- Interconnection Option 1 – A 230 kV gen-tie constructed from an onsite project substation, located near Lone Butte Road. This option would connect to existing transmission lines with the connection equipment situated on up to 10 acres of land at the corner of United Street and Purdy Avenue, or travel west to the SCE Windhub and/or Westwind Substation. The gen-tie facilities would be constructed within the study area shown in exhibits 3-2 thru 3-10.
- Interconnection Option 2 – A 34.5 kV collection line would be constructed from the western limits of the project site near Lone Butte Road and travel west to a step-up conversion station. At the United Street step-up conversion station, the 34.5 kV power would be stepped-up to a 230 kV power for delivery to the SCE Windhub and/or Westwind Substation. The gen-tie facilities would be constructed within the study area shown in exhibits 3-2 thru 3-10.

3.7 Project Characteristics

The proposed project would consist of PV panels arranged in a grid-pattern over the project site. The proposed project would include installation of PV panels that would be mounted on steel support posts that would be pile driven into the ground and connected to inverters. The PV panels would be made of a thin film material or polycrystalline silicon material covering the glass panes, which would be dark in color, highly light absorptive, and have minimum reflectivity. The PV panels would be manufactured at an offsite location and transported to the project site for installation.

The project's PV panels would be provided on either a fixed-mount array system or a single-axis tracker system. Depending on the type of technology (modules) used, the panels would measure between 4 and 7 feet in length, and the total height of the panel system measured from ground surface would be approximately 7 to 12 feet. The length of each row of panels would be approximately 300 feet and would be oriented in the east–west direction in the case of a fixed-mount array being used, and oriented in the north–south direction in the case of single-axis trackers being used. The proposed facility is intended to operate year-round and would generate electricity during the daylight hours.

The power generated on the project site would assist the State of California in complying with the Renewables Portfolio Standard under Senate Bill 350 (2015), which requires 50 percent of all electricity sold in the state shall be generated from renewable energy sources by December 31, 2030. Senate Bill 100

was approved in September 2018 and would increase the Renewables Portfolio Standard to a 100 percent goal by 2045. The power generated on the project site would be sold to California investor-owned utilities, municipalities, community choice aggregators, or other purchasers in furtherance of the goals of the California Renewable Energy Portfolio Standard. The project has an anticipated operational life of up to 35 years. At the end of the project's operational term, the project proponent would determine whether the project site should be decommissioned and deconstructed, or if it would seek an extension of its CUP. If any portion of the project site is decommissioned, it would be converted to other uses in accordance with the applicable land use regulations in effect at that time. A typical solar facility and substation are shown in **Figure 3-14**, *Typical Solar PV Power Plant Facility*, and **Figure 3-15**, *Typical Substation*, respectively.

The combined project facilities would include the following components:

- Installation of up to a total combined 300-MW of solar PV modules, mounted either on a galvanized metal fixed-tilt or single-axis racking system. The mounting systems for the modules would be mounted on steel support posts that would be pile driven into the ground;
- Installation of an energy storage facility and accessories that would provide energy storage capacity of up to 3 GWh for the electrical grid;
- A collector substation including circuit breakers, disconnect switches, metering protection equipment, and main step-up transformer(s);
- Potential upgrades to the existing SCE Windhub Substation and/or Westwind Substation and installation of new circuits, lines, switches, utility poles, etc.;
- An Operations & Maintenance (O&M) facility on the northern site to maintain the facilities;
- Overhead and underground collection systems throughout the solar facilities (the collection systems would be aggregated at multiple circuit breakers or medium-voltage switchgear positions within the project facilities, leading to the collector substation);
- 34.5 kV to 230 kV step-up conversion station and/or 230 kV gen-tie line to connect to the SCE Windhub Substation and/or Westwind Substation;
- Telecommunication equipment, including underground and overhead fiber optics, and meteorological data collection systems or supervisory control and data acquisition (SCADA);
- Onsite access roads; and
- Perimeter security fencing and nighttime directional lighting.

Solar PV Panels

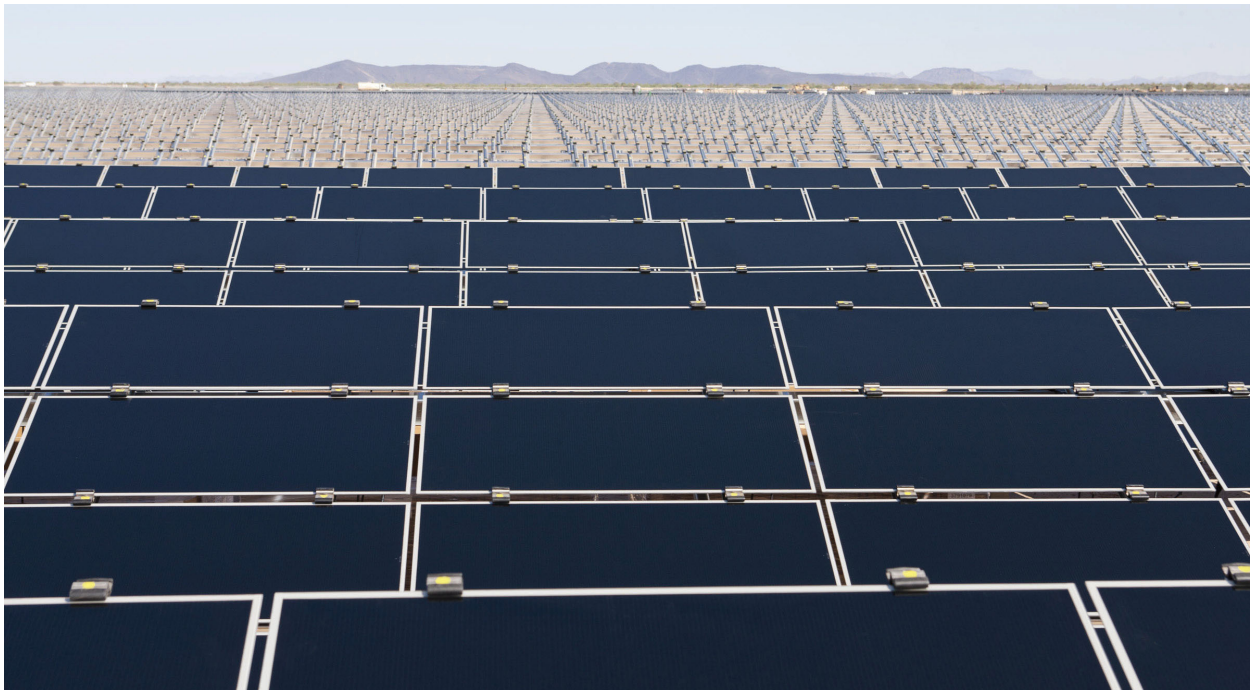
Solar energy would be captured by PV panels, with the single axis tracker solar panels aligned in rows in the north south direction or in an east-west direction if a fixed tilt racking system were used instead. The maximum height of the single axis tracker solar panels would be up to 12 feet above grade at the beginning and end of each day. Each PV panel would be attached to embedded piers using a support structure. Panel layout and spacing is typically optimized to balance energy production versus peak capacity, and depends on the sun angles and shading due to the surrounding horizon of the site. If a tracking system is used, the panels would typically be mounted with the longer side oriented east to west across the tracker system's north-south axis. Individual arrays of panels would be combined to generate the total plant capacity.



ZCC 56, Map 196; ZCC 2, Map 212;
ZCC 59, Map 213; CUP 45, Map 196;
CUP 5, Map 212; CUP 66, Map 213;
SPA 30, Map 196



Typical solar field



Oblique view of typical solar field

FIGURE 3-14: TYPICAL SOLAR PV POWER PLANT FACILITY



ZCC 56, Map 196; ZCC 2, Map 212;
ZCC 59, Map 213; CUP 45, Map 196;
CUP 5, Map 212; CUP 66, Map 213;
SPA 30, Map 196



Typical electrical substation

FIGURE 3-15: TYPICAL SUBSTATION

Solar Trackers

The project's PV panels would be provided on either a single-axis tracker system or a fixed-mount array system. If using single-axis trackers, the PV panel rows would be oriented in the north-south direction. Single-axis tracking systems would employ a motor mechanism that would allow the arrays to track the path of the sun (from east to west) throughout the day. In the morning, the panels would face the east. Throughout the day, the panels would slowly move to the upright position at noon and on to the west at sundown. The panels would reset to the east in the evening or early morning to receive sunlight at sunrise. The exact tracker manufacturer and model would be determined in the final design. If the fixed tilt racking system is used, the PV panels would be in a fixed tilt position that allows for the most sunlight specific to the geography of the project site. Fixed-tilt structures, would be constructed in east/west rows with the PV panels mounted via angled brackets on top, facing south. The fixed-tilt structures would be supported by vertical posts driven in the ground. The fixed-tilt PV panels would be positioned to receive optimal solar energy over the course of a year, tilted between 15 to 30 degrees. As a fixed-tilt system, the PV panel would not track the path of the sun.

Depending on the type of technology (modules) used, the panels would measure between 4 and 7 feet in length, and the total height of the panel system measured from ground surface would be at most 12 above grade. The length of each row of panels would be approximately 300 feet and spacing between each row would be approximately 8 to 22 feet.

Collection, Inverter, and Transformer Systems

The alternating current/direct current (AC/DC) electrical collection system includes all cables and combiners that collect electricity from the panels, delivers it to the inverters, collects it from the inverters, and ultimately delivers it to the project switching station(s). The collection system would likely be installed along internal access roads to collect power from the rows of panels and deliver it to the switching station. This collection system would likely be installed in subsurface trenches, though in some areas of the site, part or all of the collection system may be housed in above-grade raceways mounted on supports approximately 24 to 36 inches above ground level. The collection system would be rated at between 1,000 to 2,000 volts DC until it reached the inverters and a 34.5 kV AC intermediate voltage system between the inverters and the project switching station. Each of the project's facilities would include inverters, underground and overhead electrical collection systems, and fiber optics. Electrical collection systems would be installed in conjunction with panel arrays within the project site, connecting each solar panel to a feeder circuit; each feeder circuit would in turn be connected to the collector substation. The different solar panel circuits would gather into 34.5 kV circuits and either step-up to 230 kV at the United Street conversion station and/or step-up to 230 kV at the onsite substation. The power would then be delivered via 230 kV circuits to a grid interconnection point at the SCE Windhub Substation and/or Westwind Substation.

The DC electricity produced by the solar panels is converted to three-phase alternating current by a series of inverters. The two facilities would require up to 100 inverters. Alternating current is the type of electricity usable by the electric utility and is the form required to connect to the transmission system. The inverter pad equipment includes a transformer that steps up the electricity in its new form to an output voltage of 34.5 kV. This electricity is then transmitted via the medium voltage collection system to the switching station.

Energy Storage System

Energy storage plays an increasingly important role in renewable energy and helps to create a more flexible and reliable grid system. Energy storage can smooth electricity prices through arbitrage or energy shifting, manage evening energy ramps, mitigate the risk of curtailment, provide black start capability, provide backup power, and more.

The proposed project would install an energy storage facility and associated infrastructure on both the northern and southern sites that would provide the ability to store up to 3 GWh energy for the electric grid. Adjacent to the onsite collector substation and/or throughout the solar arrays energy storage systems are proposed. The energy storage batteries would be housed in a structure or within connex boxes. In the event a single structure is constructed near the onsite substation, a maximum height (including any screening for heating, ventilation, and air conditioning [HVAC]) of approximately 30 feet is anticipated. The batteries under this configuration are housed in open-air-style racking (similar to computer racking) 10 to 12 feet high. The associated inverters, transformers, and switchgear would be located immediately adjacent to the structure on concrete pads. The energy storage facility would also have a fire rating in conformance with County standards and specialized fire suppression systems installed for the battery rooms. All nonbattery rooms would have County-approved standard sprinkler systems. The structure would also have HVAC cooling in the battery room to maintain energy efficiency. Power to the HVAC, lighting, etc. would be provided via a connection to the onsite substation service transformer with connection lines installed aboveground and/or belowground. The energy storage facility would be unmanned, with remote operational control and periodic inspections and maintenance performed as necessary. The energy storage technology has not been determined at this time, but could include any commercially available battery technology, including but not limited to lithium iron, lead acid, sodium sulfur, and sodium or nickel hydride. Power stored by the energy storage facility would be gathered into 34.5 kV circuits and either step-up to 230 kV at the United Street conversion station and/or step-up to 230 kV at the onsite substation. The power would then be delivered via 230 kV circuits to a grid interconnection point at the SCE Windhub Substation and/or Westwind Substation.

Substations

The solar facility would include an onsite substation, located on the northwest portion of the northern site. Substation generation voltage would step up from 34.5 kV to 230 kV for off-site transmission. The substation would contain a control building with an attached battery room and standard substation equipment. The substation would not exceed 3 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 height (transmission tower plus 15 feet). Per Section 19.08.160 of the Kern County Zoning Ordinance, any tower over 80 feet in height would require military review.

Grounding of the substation would be accomplished by ground grids designed to meet the requirements of the Institute of Electrical and Electronics Engineers (IEEE) Guide for Safety in AC Substation Grounding. Final ground grid design would be based on site-specific information such as available fault current and local soil resistivity. Typical ground grids consist of direct buried copper conductors with 8-foot-long copper-clad ground rods arranged in a grid pattern to approximately 3 feet outside of the substation area.

Operation and Maintenance Facilities

The O&M building would be up to approximately 8,000 square feet and is expected to be co-located with the proposed collector substation. It is anticipated that a maximum of six permanent staff employees would use the O&M building for ongoing facility monitoring, equipment storage, and repairs. The O&M building is expected to be a prefabricated commercial structure that measures up to 100 feet by 80 feet in area and 12 feet high. Permanent restroom facilities with septic tanks and/or portable toilets would be used for sanitary purposes at the O&M building, and a permanent water source in the form of trucked water, well water, or bottled water would be provided for the staff. The proposed building would include the requisite number of parking spaces for staff members' vehicles and O&M equipment. The parking area would measure approximately 10,000 square feet. Power for the O&M buildings and the project's associated structures would be provided by the project's electrical generation or supplied by the local power provider.

The O&M facility would include approved hazardous waste storage and associated containment for oils and fuels, as required. Other hazardous chemicals that may be employed on site may include cleaning agents for the O&M building and other such chemicals that would be standard at a commercial site. Typical O&M activities that would occur during operation include but are not limited to liaison and remote monitoring; administration and reporting; semi-annual and annual services; remote operations of inverters; site security and management; additional communication protocol; repair and maintenance of solar facilities, battery facilities, substations, electrical transmission lines, and other project facilities; and periodic panel washing.

Onsite Meteorological Stations

The project would include multiple onsite solar meteorological stations located near the O&M building and throughout the array which would consist of solar energy (irradiance) meters, as well as an air temperature sensor and wind anemometer. This equipment, specifically the wind anemometer, would have an estimated height of approximately 8 feet. The precise location of the meteorological stations would be determined during detailed design engineering. Power for the meteorological stations would be provided by the plant auxiliary power system or a dedicated PV module with a small battery.

Site Access and Security

During operation, the project would be accessed from various roadways. SR-58 intersects with SR-14 and runs west of the project site; both the SR-58 and SR-14 provide primary access as shown on Figure 3-2. The northern solar facility would be accessed by Lone Butte Road or 10th Street from SR-58. The southern solar facility would be accessed by Silver Queen Road or Reed Avenue from United Street off SR-14. While existing roads would be utilized to the greatest extent possible, potential improvements to unpaved roads (such as evening out the road topography or compacting the dirt) may be required off site to serve as access roads from the existing road network to the project. As depicted the project's Site Plans Figures 3-3 through 3-4, new unpaved roads within the project site would be constructed. A 20-foot-wide minimum road is required around the perimeter of the solar arrays for the fire department and emergency vehicles. Additional internal maintenance roads would be located throughout the project area. Spacing between each row would depend on final panel type, orientation, and Caltrans/County regulations. These site access roads would remain in place for ongoing operations and maintenance activities after construction is completed.

Final service road alignments would depend on the final placement of the solar panels and on the results of field investigations, including topography and any other site-specific details to be incorporated into the final

design. Should access roads be required to cross streambed areas under the jurisdiction of the California Department of Fish and Wildlife, appropriate crossings would be installed to minimize impacts to these jurisdictional areas and comply with all California Fish and Game Code requirements, including authorization through a Streambed Alteration Agreement as appropriate.

Security fencing would be installed in accordance with Kern County zoning requirements. Based on current Kern County ordinances, the project applicant has the option to fence either the exterior northern and southern boundaries of the entire project site, each solar panel row independently, or a grouping of solar blocks. At this time, the project proponent proposes to install a 6-foot- to 8-foot-high chain-link security fence around the perimeter of the facility to help prevent access by the public; the fence may include barbed wire as an additional security measure. The fencing would remain for the life of the project.

The project's lighting system would provide O&M personnel with illumination for both normal and emergency conditions. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Permanent motion-sensitive, directional security lights would be installed to provide adequate illumination around the substation areas and points of ingress/egress. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties in conformance with Kern County Ordinance (Chapter 19.81) – Outdoor Lighting-Dark Skies requirements.

Motion-sensitive cameras would also be installed throughout each solar facility at the inverters for added security. The cameras would be mounted on poles of approximately 20 feet in height.

Electrical Interconnection to Transmission Owner Infrastructure

The proposed project would connect with existing SCE electrical lines from SCE's circuit on the western border of the project boundary to a pole and pole-top mounted breaker onsite.

3.7.2 Construction

The construction activities for the proposed project fall into three main categories: (1) site preparation; (2) system installation; and (3) testing, commissioning, and cleanup. The entire construction process is estimated to take between 18 and 30 months, depending on workforce. In order to complete construction activities within the 18-month period, a larger number of employees and associated equipment would be onsite versus a 30-month construction duration that would have a reduced number of employees and associated equipment. Therefore, construction being completed in the shorter 18-month duration would have a greater environmental impact than a longer 30-month construction duration. For purposes of the environmental review in each environmental subject area throughout the EIR, a worst-case scenario (i.e., greatest environmental impact) was utilized to evaluate potential environmental impacts.

Schedule and Workforce

Construction would primarily occur during daylight hours, Monday through Friday, between 7:00 a.m. and 6:00 p.m., as required to meet the construction schedule. Additional hours/days may be necessary to facilitate the schedule. Any construction work performed outside of the normal work schedule would be coordinated with the appropriate agencies and would conform to the Kern County Noise Ordinance (Chapter 8.36).

Site grading and earthwork is anticipated to begin during the third quarter of 2020, with operations beginning in the fourth quarter of 2021 and into 2022. The onsite construction workforce is expected to peak at up to 550 individuals; however, the average daily workforce is expected to be 350 construction, supervisory, support, and construction management personnel onsite during construction. It is anticipated that the construction workforce would commute to the site each day from local communities and report to the designated construction staging yards prior to the beginning of each workday. **Table 3-4, Solar PV Construction Activity, Duration, and Equipment**, depicts the construction activities, duration, and equipment by phase.

TABLE 3-4: SOLAR PV CONSTRUCTION ACTIVITY, DURATION, AND EQUIPMENT

Activity	Approximate Duration	Equipment
Phase 1: Perimeter Fence & Road Installation (Site Preparation)	5 Months	1 Skid Steer Loader
Phase 2: Clearing and Grubbing (Site Preparation)	5 Months	1 Rubber Tired Dozer 1 Tracker/Loader/Backhoe 2 Graders 1 Scraper 2 Rollers
Phase 3: Trenching – Underground work	14 Months	2 Excavators 1 Roller 1 Generator Set 1 Other General Industrial Equipment 1 Forklift
Phase 4: System Installation (Building Construction)	14 Months	2 Generator Sets 1 Crane 8 Forklifts 1 Other General Industrial Equipment
Phase 5: Gen-tie Construction	4 Months	1 Crane 2 Tracker/Loader/Backhoe
Phase 6: Testing, Commissioning, Site Clearing (Site Preparation)	3 Months	1 Skid Steer Loader 1 Grader

Site Grading and Earthwork

Beginning work on the project would involve preparing the land for installation of arrays, energy storage facility, related infrastructure, access driveways, and temporary construction staging areas. Prior to initial construction mobilization, preconstruction surveys would be performed and sediment and erosion controls would be installed in accordance with an approved Storm Water Pollution Prevention Plan (SWPPP). Stabilized construction entrances and exits would be installed at driveways to mitigate tracking of sediment onto adjacent public roadways.

Construction activities would be expected to include mowing, excavation, and grading of the project site. Site preparation and construction would occur in accordance with all federal, state, and County zoning code requirements. Noise-generating construction activities would be limited to the construction hours noted above. All stationary equipment and machines with the potential to generate a significant increase in noise

or vibration levels would be located away from noise receptors to the extent feasible. The contractor would conduct construction activities in such a manner that the maximum noise levels at the affected buildings would not exceed established noise levels.

All applicable local, state, and federal requirements and best management practices (BMPs) would be incorporated into the construction activities for the project site. The construction contractor would be required to incorporate BMPs consistent with the County zoning ordinance and with guidelines provided in the California Stormwater Quality Association's Construction Best Management Practice Handbook, including the preparation of a SWPPP and a soil erosion and sedimentation control plan to reduce potential impacts related to construction of the proposed project. Prior to initial construction mobilization, pre-construction surveys would be performed and sediment and erosion controls would be installed in accordance with the approved SWPPP. Stabilized construction entrances and exits would be installed at driveways to reduce tracking of sediment onto adjacent public roadways.

Site preparation would be consistent with County BMPs and Eastern Kern Air Pollution Control District rules for dust control. Site preparation would involve the removal and proper disposal of existing vegetation and debris that would unduly interfere with project construction or the health and safety of onsite personnel. Dust-minimizing techniques would be employed, such as maintaining natural vegetation where possible, using mow-and-roll vegetation clearance strategy, placement of wind control fencing, application of water, and application of dust suppressants. Conventional grading would be performed throughout the project site but minimized to the maximum extent possible to reduce unnecessary soil movement that may result in dust. Earthworks scrapers, excavators, dozers, water trucks, paddlewheels, haul vehicles, and graders may all be used to perform grading. Land-leveling equipment, such as a smooth steel drum roller, would be used to even the surface of the ground and to compact the upper layer of soil to a value recommended by a geotechnical engineer for structural support. Access roads may be additionally compacted to 90 percent or greater, as required, to support construction and emergency vehicles. Certain access roads may also require the use of aggregate or decomposed granite to meet emergency access requirements. Soil movement from grading would be balanced on the site, and no import or export of soils would occur.

Trenching would be required for placement of underground electrical and communication lines, and may include the use of trenchers, backhoes, excavators, haul vehicles, compaction equipment, and water trucks. After preparation of the site, the pads for structures, equipment enclosures, and equipment vaults would be prepared per geotechnical engineer recommendations. The substations and switchyard areas would have a grounding grid installed and would be covered with aggregate surfacing for safe operation. Collection and transmission structures from the substation and switchyard to the existing transmission line would require drilling for foundation support, and the soils removed would be spread across the project site.

Solar Array Assembly

Erection of the solar arrays would include support structures and associated electrical equipment and cabling. First, steel piles would be driven into the soil using pneumatic techniques, similar to a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles, or "standards," are typically spaced approximately 10 feet apart and installed to a revealed height of approximately 4 feet above grade. Once the standards have been installed, the horizontal cross-members would be placed and secured. The arrays would consist of either a motorized single-axis tracking system or a fixed-mount array system. For a single-axis tracking system, the trackers and their associated motors would be mounted to the horizontal cross-members. For a fixed-mount system, a galvanized metal racking system, which holds the

PV modules in the correct position for maximum capture of solar insolation, would be field assembled and attached to the horizontal cross-members.

Concrete would be required for the footings and pads for the substation transformers and equipment. Concrete may also be required for pile foundation support, depending on the mounting system chosen for installation. Final concrete specifications would be determined during detailed design engineering. Concrete will be purchased from an offsite supplier and trucked in to the project site. During this work, there would be multiple crews working on the site with various equipment and vehicles, including special vehicles for transporting the modules and other equipment. As the solar arrays are installed, the substations and shared solar switchyard would be constructed and the electrical collection and communication systems would be installed. Within the solar fields, the electrical and communication wiring would be installed in underground trenches, although some of the mid-voltage collection runs and communication systems may be on overhead lines. The wiring would connect to the appropriate electrical and communication terminations and the circuits would be checked and commissioned prior to operation.

Construction Water Use

During construction of the proposed project, water would be required for common construction related purposes, including but not limited to dust suppression, soil compaction, and grading. Dust-control water may be used for ingress and egress of onsite construction vehicle equipment traffic and for the construction of the solar equipment. A sanitary water supply would not be required during construction, because restroom facilities would be provided as portable units to be serviced by licensed providers.

The overall construction water usage is anticipated to be approximately 200 acre-feet (AF) during the 18- to 30-month construction period. During construction, the water used is anticipated to be purchased from a local water purveyor or existing onsite water wells. Water demand during construction is expected to be the same if the project is constructed during a year with normal precipitation, a year with less-than-average precipitation, or a multiyear period of less-than-average precipitation.

Several sources of water have been identified, which individually or in combination, would be available to supply the proposed project's construction water demands. These sources include onsite groundwater wells, the Mojave Public Utilities District (MPUD), and California City.

Solid and Nonhazardous Waste

The project site would produce a small amount of solid waste from construction activities. This may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation wastes. These wastes would be segregated for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. Vegetation wastes generated by site clearing and grubbing would be chipped/mulched and spread on site or hauled offsite to an appropriate green waste facility. The closest Class III municipal landfill is the Mojave-Rosamond Recycling and Sanitary Landfill (RSLF) which is located approximately 1 mile southwest of the northern project site. The Mojave-Rosamond RSLF is an unlined, active public Class III sanitary landfill owned by the County of Kern and operated by the Kern County Public Works Department.

Hazardous Materials

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

Hazardous Waste

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

3.7.3 Operation and Maintenance

Typical O&M activities that would occur on the project site during operation include, but are not limited to, liaison and remote monitoring; administration and reporting; semi-annual and annual services; remote operations of inverters; site security and management; additional communication protocol; repair and maintenance of solar facilities, substations, electrical transmission lines, and other project facilities; and periodic panel washing. The project would include one onsite O&M building, to be utilized by a maximum of six permanent staff employees for ongoing facility monitoring, equipment storage and repairs during the operational phase of the project.

Operations Water Use

During operation and maintenance of the project, it is anticipated that water would be required for panel washing, equipment washing, sanitary and non-sanitary uses, and other miscellaneous water uses, such as landscaping. Water would be obtained either from Mojave Public Utility District or from groundwater sources. During solar and energy storage project operations, solar panel washing is expected to occur one to four times per year and temporary general labor (up to 10 individuals) may assist in the panel cleaning. Panel washing of this size would require 45 days to complete per wash cycle. Water consumption is expected to be around 0.28 gallons per square yard of panel, based on other similar operations. Given a 300 MW AC plant, with four cycles per year, the annual water usage is expected to be up to approximately 30 acre-feet per year (AFY) of water per year. Although the project proponent only expects to wash the PV panels once per year, the panels may need to be washed more frequently (up to four times per year) based on site conditions. Conditions that may necessitate increased wash requirements include unusual weather occurrences, forest fires, local air pollutants, and other similar conditions. Therefore, the proposed project is proposing the use of up to 30 AF per year for the explicit use of washing panels. This amount is in addition to the water necessary

for the operations, fire suppression, and site maintenance, which is a small amount of groundwater (i.e., approximately 0.6 AF). In the event that electrical power distribution cannot be delivered to the groundwater pump, a generator would be located adjacent to the well pump to provide power.

Solid and Nonhazardous Waste

The project would produce a small amount of waste associated with maintenance activities, which could include broken and rusted metal, defective or malfunctioning modules, electrical materials, empty containers, and other miscellaneous solid waste, including the typical refuse generated by workers. Most of these materials would be collected and delivered back to the manufacturer or to recyclers. Non-recyclable waste would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. The closest Class III municipal landfill is the Mojave Recycling and Sanitary Landfill (RSLF). Shipping materials, construction waste, and other general solid wastes would be separated for recycling where possible/available.

Hazardous Materials

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

Hazardous Waste

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

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

Security and Lighting

The proposed project would be fenced by a 6-foot-high chain link fence installed around the perimeter of the facility to help prevent access by the public. Locking gates would be installed at specified points of ingress and egress. Limiting access to the project site would be necessary both to ensure the safety of the public and to protect the equipment from potential theft and vandalism.

Vegetation is sparse with little potential for vegetative fuel buildup. Nevertheless, the project proponent would prepare a fire prevention plan for the project in compliance with applicable Kern County regulations.

The project's lighting system would provide operation and maintenance personnel with illumination for both normal and emergency conditions. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Additionally, lighting would be directed downward and

shielded to focus illumination on the desired areas only and to minimize light trespass in accordance with Kern County Zoning Ordinance Chapter 19.81- Outdoor Lighting- Dark Skies Requirements.

3.7.4 Decommissioning

The project has an anticipated operational life of up to 35 years, after which the project proponent may choose to update site technology and recommission, or to decommission the site and remove the systems and their components. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, state, and County regulations. Following the expiration of a power purchase agreement for the proposed project, the project proponent may, at its discretion, choose to enter into subsequent power purchase agreements or to decommission and remove the system and its components. The project site could then be converted to other uses in accordance with the applicable land use regulations in effect at that time.

It is anticipated that during project decommissioning, project structures would be removed from the ground on the project site. Aboveground equipment that would be removed would include module posts and support structures, onsite transmission poles that are not shared with third parties, and the overhead collection system within the project site; inverters, transformers, electrical wiring, and equipment on the inverter pads. The substation would be removed if it is owned by the project proponent; however, if a public or private utility assumes ownership of the substation, the substation may remain onsite to be used as part of the utility service to supply other applications.

Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment off site to be recycled or disposed of at an appropriately licensed facility. Removal of the solar modules would include removing the racks on which the solar panels are attached and placing them in secure transport crates and a trailer for storage, for ultimate transportation to another facility. Once the solar panels have been removed, the racks would be disassembled and the structures supporting the racks would be removed. Site infrastructure would be removed, including the fences and the concrete pads that may support the inverters, transformers, and related equipment. The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried with the equipment being used. The fencing and gates would be removed, and all materials would be recycled to the extent feasible. Project roads would be restored to their pre-construction condition unless the landowner elects to retain the improved roads for access throughout that landowner's property. The area would be thoroughly cleaned and all debris removed. A collection and recycling program would be executed to promote recycling of project components and minimize disposal in landfills.

3.8 Entitlements Required

The anticipated approvals needed for the project include changes in zone classification and adoption of conditional use permits within the project boundaries. Construction and operation of the proposed solar energy facility may require additional State, local, and federal entitlements; as well as discretionary and ministerial actions and approvals listed below:

3.8.1 Kern County

- Consideration and certification of Final EIR
- Adoption of 15091 Findings of Fact and 15093 Statement of Overriding Considerations
- Approval of proposed Mitigation Measure Monitoring Program
- Approval by the Kern County Board of Supervisors for proposed changes in zone classification
- Approval by the Kern County Board of Supervisors for proposed conditional use permits for the project site
- Specific Plan Amendment No. 30, Map No. 196 (Circulation Element)
- Kern County grading and building permits
- Kern County encroachment permits

3.8.2 Other Responsible Agency Entitlements

- U.S. Fish and Wildlife Service Habitat Conservation Plan (if required).
- California Department of Fish and Wildlife (CDFW), Lake and Streambed Alteration Agreement or Incidental Take Permit or Habitat Conservation Plan (if required)
- Regional Water Quality Control Board – Lahontan Region National Pollutant Discharge Elimination System Construction General Permit and Section 401 certification (if required)
- California Department of Transportation Right-of-Way Encroachment Permit, and Permit for Transport of Oversized Loads
- Eastern Kern County Air Pollution Control District Authority to Construct/Permit to Operate/Fugitive Dust Control Plan

3.9 Cumulative Projects

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

According to the CEQA *Guidelines*:

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

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

(b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related

past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time” (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Section 15355).

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

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

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

Unless otherwise noted in each chapter, the geographic scope for the cumulative impact analysis is the western Antelope Valley. The western Antelope Valley includes portions of the southeast corner of Kern County and portions of northern Los Angeles County. The valley is formed by the Tehachapi Mountains to the northwest and San Gabriel Mountains to the southwest. SR-14 is considered the eastern boundary of this area. The western Antelope Valley is triangularly-shaped and is about 35 miles from west to east and 40 miles from north to south at its widest points. This geographic scope is selected because of its relatively uniform terrain, soil conditions, climate, and habitat value; its low population and development density relative to areas east of SR-14; and the region’s common groundwater basin and water supply considerations. SR-14 is a major north-south route in the area, dividing the western Antelope Valley from the rest of the Mojave Desert. The Mojave Desert broadens considerably east of SR-14 as the Tehachapi Mountains run north and the San Gabriel Mountains run southeast. East of SR-14, the valley does not feature the same mountain viewsheds found in the western Antelope Valley, and includes more densely developed areas, including the community of Rosamond, the cities of Lancaster and Palmdale, Mojave Air & Space Port, Edwards Air Force Base, and U.S. Air Force Plant 42. Projects within Lancaster and Palmdale’s urban cores are not considered to be part of the Western Antelope Valley. These projects are of a distinctly urban character, and in many respects would not have the same type of potential impacts as the project and others in the western Antelope Valley. Further, inclusion of urban projects could dilute, improperly magnify, or otherwise impair analysis of certain project impact areas. However, when appropriate (as determined by the impact being analyzed), a smaller or larger geographic scope was selected.

A list and description of past, present, and reasonably foreseeable projects near the project can be found in **Table 3-5, Cumulative Projects List**. **Figure 3-16, Cumulative Projects**, shows the approximate location of the proposed projects in Kern County considered in the cumulative analysis.

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
KERN COUNTY PROJECTS – Figure 3-13						
Solar Projects						
1. Apollo Solar Project by Lendlease Energy Dev.	SWC of Backus Rd & Tehachapi Willow Springs Rd. SEC of Backus Rd. & 100th St. W. NEC of Backus Road & 100th St. West	Three CUPs for the solar sites (Case ID 15013, 15014, 15274), a CUP for a temporary concrete batch plant during construction (15275), a CUP for a microwave tower (15276), and a GPA for elimination of road reservations (15277).	CUP	CUP 37, CUP 38, CUP 39, Map 214	346-022-03 346-022-03 346-131-12	499.79 acres
2. Aurora Solar LLC	6970 Tehachapi Willow Springs Rd.	Proposed Solar Development	CUP	CUP, Map 214	346-032-05	320 acres
3. Camino Solar Project by Aurora Solar LLC	N. 175th St West (Manzana Wind)	44 MW	CUP	CUP, Map 216	476-052-09	339 acres
4. Cantil Solar Project by Nautilus Solar Energy LLC	Sec Valley Rd & Norton Rd	9 MW	CUP, ZCC	CUP, ZCC 12, Map 133	181-040-01	77 acres
5. David Firestone	5 miles west of Willow Springs Rd.	20 MW	CUP	CUP, Map 199	400-053-02	160 acres
6. Derrill Whitten Jr.	Sun Canyon, CA	Proposed Solar Development	CUP	CUP, Map 149	460-050-01	25.29 acres
7. Duane P. Deblauw	15th St West, Rosamond, CA	1.5 MW Solar Development	CUP	CUP, Map 230	258-090-27	9.22 acres

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
8. Ed Shahnazarian by Nelms Surveying	Highway 14, 2.5 miles N of Phillips	Proposed Solar Development	CUP	CUP, Map 152	469-290-08	133 acres
9. EDF Renewable Development Inc.- Richard Miller	W. of Rosamond, SW of SR-58		CUP	CUP, Map 232	358-021-04	2,250 acres
10. EDF Renewable Energy/Catalina Solar 2	Info not available		CUP	CUP, Map, 215	474-154-21	20.45 acres
11. EDF Renewable Energy/BAR 13 Solar	125th Street W. Champagne Ave.		CUP	CUP, Map 215	474-131-03	38.58 acres
12. Edwards AFB Solar Project by Edwards AFB LLC	Edwards AFB	600 MW	Franchise Agreement	Maps 212 & 213	244-250-02; multiple	3,500 acres
13. French, Daren	W/S College Heights Blvd.	Proposed Solar Development	ZCC	ZCC, Map 94	097-180-08	20 acres
14. GE Energy by TY Remington	S of Hwy 58, E Chantico Rd.	10–20 MW	CUP	CUP 36, Map 167	224-120-11	820 acres
15. Gettysburg Solar LLC	SW Corner of Rosamond & 70th St. W	20 MW	CUP, SPA, ZCC, Vacation	CUP, SPA, ZCC, Vacation, Map 213	374-011-06	159 acres
16. IP Solar Company	SEC of MoConnell & 105th	Proposed Solar Development	CUP	CUP, Map 215	474-120-04	40 acres
17. Jack Pigott/ Windhub Solar A LLC	90th St. West and Purdy, Mojave	20 MW	CUP	CUP, Map 197	237-350-02	304 acres

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
18. JBRCY LLC/ Richard Yang	East Mojave	Proposed Solar Development	ZCC	ZCC 2, Map 174	228-271-02	126 acres
19. Jonathan Bender	1300 block of Hwy 58 (South Side)	Proposed Solar Development	CUP	CUP, Map 196	236-360-12	29 acres
20. Kingbird Solar LLC	Avenue A & 170th St West	40 MW	CUP, ZCC, SPA	CUP, ZCC, Map 233	261-196-07	324 acres
21. LADWP		10 MW	CUP	CUP 5, Map 150	461-050-02	75 acres
22. Megawatt Development Holdings/John Bissell	N/S McConnell Ave., Rosamond	1 MW	CUP	CUP, Map 215	474-140-10	40 acres
23. Monroe Scott	2765 & 2807 Park Ave. Rosamond	Proposed Solar Development	CUP	CUP 33, Map 230	258-190-07	2.50 acres
24. Mon-Wei Lin	SWC Rosamond Blvd & 130th St. West	Proposed Solar Development	CUP	CUP, Map 232	359-020-05	320 acres
25. Nextera Energy Resources	9 miles N of California City	250 MW	CUP	CUP 11, 152	469-021-01	2,320 acres
26. Pensco Trust Company	N of 395 @ Avenida Del Sol & Buckle	Proposed Solar Development	CUP	CUP, Map 46	064-440-20	37 acres
27. Prewoznik, Marilyn	E of Hwy 58 @ 140th St. E	Proposed Solar Development	CUP	2 – CUPs, Map 193	233-340-16 233-350-06	169.90 acres
28. Columbia LLC by Recurrent Energy	SE Purdy Ave. & Goldtown St.	Proposed Solar Development	CUP	CUP, Map 196	427-030-03	Info Unavailable

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
29. RE Great Lakes II	W/S 10 St. West, ¼ mile N of Cypress	5 MW solar facility	CUP	CUP 34, Map 230	473-023-10	40 acres
30. RE Rosamond I	Favorito Ave. & 65th St. W.	Proposed Solar Development	CUP	CUP, Map 231	252-013-01	320 acres
31. RE Rosamond II	Favorito Ave. & 65th Street W	20 MW	CUP	CUP 4, Map 231	252-013-01	160 acres
32. RE Rio Grande Solar	E/S Hwy 14 & Sierra Hwy	5 MW	CUP	CUP 30, Map 196	427-400-00	46 acres
33. Robbie Barker	E of Inyokern Road and Brown Rd	Proposed Solar Development	CUP	CUP, Map 47	084-010-43	100 acres
34. Roshawn Helmandi	Jameson Rd. and Jameson St.	Proposed Solar Development	CUP	CUP, Map 166	223-360-34	75.69 acres
35. Sinarpower Inc.	South of Oak Creek Rd.	Proposed Solar Development	CUP	CUP 10, Map 197	237-360-05	17.50 acres
36. Sunlight Partners	NW corner W Rosamond & 83rd St. W	Proposed Solar Development	ZCC	ZCC, Map 231	252-322-20	29.55 acres
37. Sunlight Partners	N of Elder between 90th W & 85th W	Proposed Solar Development	ZCC	ZCC, Map 231	374-250-08	19.78 acres
38. Sunshine Solar Project/Cogentrix Sunshine LLC	NWC of Ave A & 90th W	40 MW	CUP, ZCC	CUP, ZCC	374-460-12	319 acres
39. The Aeromen LLC	2 miles W of Mojave on Oak Creek	Four PV Solar Projects Three 5 MW, one 10 MW	CUP	CUP, Map 197	237-562-12	237 acres

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
40. WDG Capital Partners	S of Rosamond Blvd, E of 80th W	20 MW	CUP, ZCC, SPA	CUP, ZCC, SPA, Map 231	374-011-38	120 acres
Other Non-solar Projects						
41. Estep, Fauna	1634 Hwy 58, Mojave		ZCC	ZCC 18, Map 196	236-360-12	6.49 acres
42. Joan Jackson	10623 Silver Street, Mojave	Addition of 3 cargo containers	CUP	CUP, Map 213	429-134-20	2.47 acres
43. Lisa Norman	21420 Mtn. Dr. Tehachapi, CA 93561	Kennel Training Facility	CUP	CUP, Map 165	290-172-04	0.47 acres
44. Kjelstrom & Assoc./Service Rock Products	S/S Hwy 58, ¼ mile E/O Janata St.	AH to M-2 PD	ZCC	ZCC 42, Map 196	428-152-03	24.53 acres
45. Optisolar, Eugene Gabrych	140th @ Dawn, Rosamond	Temporary Use, Solar research and design	CUP	CUP 23, Map 232	358-021-07	161 acres
46. Palmer, Patrick & Jackqueline	10237 Mary St., Mojave	Secondary residential unit, mobile home	CUP	CUP 61, Map 213	429-160-06	2.50 acres
47. Tehachapi Performing Arts Center/BJ Mitchell	Red Apple & Reeves St	Performing Arts Center with Auditorium, museum, and solar and wind turbines	CUP	CUP 14, Map 166	223-110-35	7.25 acres
48. 801 Balboa LLC	S Hwy 202 appx. 700 feet W of Banduci	Operation of small organic farm	CUP	CUP 71, Map 196	377-020-09	Info unavailable
49. Firethorn & Avenue South LLC/AEI-CASC ENG'G	N/2 & N/2 SE/4 SEC 29	ZCC to R-1	ZCC	ZCC, Map 196	427-030-03	400 acres

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
50. Oak Valley Inc. by Delmarter and Deifil	West of Koch & North of Oak Creek Road	ZCC to E (2 1/2) RS FPS	ZCC	ZCC, Map 196, Section 7	427-062-20	10 acres
51. Karen Wang/Peter Wang	E/S of SR-14 at Frontage Road; NWC of SR-14 and Dawn Road	ZCC to C-2 PD; GPA to 6.2; GPA from 8.5 to 6.1, 6.2, or 6.3	ZCC, GPA	Map 233, Section 33	430-051-14; 431-121-16	3.47 acres
52. Karl King/Richard Beigle	NWC and NEC of Sopp Rd. and SR-14	ZCC to E-1; GPA to 5.5	ZCC, GPA	Map 213	430-022-05	135 acres
53. Christopher Compton	Lone Butte Rd.	Vehicle wrecking yard	CUP	CUP 60, Map 213	430-260-41	2.50 acres
54. Greg Lansing/Oliver Cagle	N/S SR-14 and SR-58, Mojave	8.5, 8.5-2.5, and 5.4-2.5 to 5.3. 465 sf lots (Mojave Specific Plan)	SPA, ZCC	SPA 22, ZCC 43, Map 196, Section 5	427-010-03	510 acres
55. North Star Properties/Mark Judson	W/S of Koch at Dougle Ave., Mojave	ZC to R-1 FPS CL & E(20) FPS CL	ZCC	ZCC 13, Map 196, Section 7	427-061-04	37.70 acres
56. Dolores Kilby/Anderson	2100 Mono St., Mojave	ZC to C-1 PD	ZCC	ZCC 22, Map 196, Section 8	236-140-02	0 acres
57. PKB Consulting	W/S Holt ST, 1/4 mi N/O Arroyo Ave.	GPA 5.4 to 5.3, ZCC A-1 FPS to R-1	GPA, ZCC	GPA, ZCC, Map 196	427-052-03	40 acres

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
58. Golden Queen Mining Co. Inc.	Soledad Mountain	Modification of Surface Mining & Reclamation Plan; and Appeal 3, Map 196; Surface Mining & Reclamation Plan; Appeal 3, Map 196	CUP	CUP 41, Map 213; CUP 22, Map 214; CUP 27, Map 196	429-190-03; 342-052-25; 427-130-11	0 acres
59. Katherine Davis Christman by Cornerstone Eng.	SWC Backus & 25th St. West	8.5 To 5.6 & 5.7	GPA	GPA 22, Map 213	430-100-53	20.16 acres
60. Alta Windpower Development	Oak Creek Road & Cameron Rd.	ZC To A & Incorporate WE Combining District; ZC To A WE; Temporary Concrete Batch Plant	ZCC, CUP	ZCC 40, Map 197; ZCC 24, Map 214; CUP 6, Map 197	237-043-02; 345-061-03; 237-043-02	5,525.76 acres
61. United Engineering Group	E/S Sierra Hwy, 1 mile N of Rosamond	GPA from 5.6 & 5.6/2.4 to 5.3 & 5.3/2.4; ZCC from A-1 to R-1 CL;	GPA, ZCC	GPA 66, Map 230; ZCC 116, Map 230; GPA 67, Map 230	471-022-14	536 acres
62. Kern County Waste Management	Mojave Landfill	Expansion to Regional Landfill	ZCC	ZCC 55, Map 213	428-030-33	Info Unavailable
63. Fresh Winds International Ltd. By WRA Engineering	NEC Rutan & Purdy, Mojave	ZCC to R-1	ZCC	ZCC 1, Map 196, Section 19	427-120-07	40 acres
64. Landtec Development/ Cornerstone	Intersection 30th Street West & Backus Rd.	GPA from 8.5 to 6.2	GPA	GPA, Map 213	430-100-01	9.66 acres

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
65. Mohammad Arfan/ Esmerardo Montesians	15190 Sierra Hwy	Recyclable Collection & Storage	CUP	CUP, Map 196, Section 17	236-420-02; 236-420-03	Info Unavailable
66. Ron Leonard/ Environmental Recycling Services	Boneyard Rd.	Aircraft wrecking facility/yard for the purpose of scrap metal recycling	CUP	CUP 37, Map 196	428-010-05	496.50 acres
67. Grigor Termendjian	14675 Holt St., Mojave	LNG Plant	CUP	CUP Map 196	427-112-11	9.76 acres
68. Mojave Chamber of Commerce	15811 K St., Mojave	Allow the placement of a commercial coach (caboose) and office; EOT one year CUP allowed railroad caboose used as an office/info center	CUP	CUP 13, Map 196, Section 17	236-221-13	0.35 acres
69. T-Mobile West LLC, Adrian Panaud	8747 25th St. West, Mojave	CUP for cell tower	CUP	CUP 63, Map 213	430-100-52	Info Unavailable
70. Richard G. Kosnik, POE Associates	Bishop Dr., Mojave	ZCC to match zoning to 6.3 and 7.2 GPA	ZCC	ZCC 19, Map 169	225-351-46	Info Unavailable
71. Dona Recchia	Northerly of SR-58 Bypass	8.5/2.5, 8.3, & 4.1 to 6.3	GPA	GPA, Map 168, Section 26	224-610-01	223.06
72. Water Resorts Inc. by Nelms Surveying	N/S Hwy 58, approx. 900 feet E of Airport	Zone change to M-1	ZCC	ZCC, Map 196, Section 16	236-360-69	20.04
73. AT&T by Vance Pomeroy	1863 Hwy 58, Mojave	To allow an 80-foot-tall ball field light standard for wireless communication facility	CUP	CUP 7, Map 186, Section 16	236-090-02	Info Unavailable

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
LOS ANGELES COUNTY PROJECTS – Figure 3-13						
City of Lancaster						
1. CUP 11-02	90th St. West between Avenue K-8 and K-12	3 MW solar facility, RR -2.5	Info unavailable	Info unavailable	Info unavailable	Info unavailable
2. CUP 11-03	SWC of 90th St. West and Avenue H	10 MW solar facility, RR -2.5	Info unavailable	Info unavailable	Info unavailable	Info unavailable
3. CUP 11-05	SEC of 80th St. West and Avenue J	20 MW solar facility	Info unavailable	Info unavailable	Info unavailable	Info unavailable
4. CUP 11-07	SEC of 110th St. West and Avenue J	30 MW solar facility, RR -2.5, UR, SP	Info unavailable	Info unavailable	Info unavailable	Info unavailable
5. CUP 11-09	NWC of 60th St. West and Avenue J	68 single-family dwellings, drainage channel and park	Info unavailable	Info unavailable	Info unavailable	Info unavailable
6. CUP 10-22	Bounded by Avenue H, H-8, 80th St. West and 90th St. West	PV project comprised of two 19-MW solar fields	Info unavailable	Info unavailable	Info unavailable	Info unavailable
7. CUP 04-10	SWC of 20th St. West and Avenue J-8	Marriott Towne Place Suites	Info unavailable	Info unavailable	Info unavailable	52,594± SF
8. CUP 10-20	E side of 30th St. West, north of Avenue M	Hindu temple, hall and other structures	Info unavailable	Info unavailable	Info unavailable	2.48± acres; 2,169± SF Hindu temple, 2,017± SF hall

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
City of Palmdale						
9. CUP 12-008	Avenue Mall Ring Rd.	Proposed bona fide restaurant/cocktail lounge/nightclub	Info unavailable	Info unavailable	Info unavailable	6,000 SF
10. SPR6-10-1T	S side of Ranch Vista, E of Tilbury Dr.	Two year TE to previously approved project for 80 detached condos on 12.3 acres	Info unavailable	Info unavailable	Info unavailable	Info unavailable
11. PA11-019	SWC of Lowes Dr. and Rancho Vista	Five commercial retail buildings and carwash on 4.9 acres.	Info unavailable	Info unavailable	Info unavailable	4.9 acres
12. PA11-021	N of Auto Center Dr. between Trade Center & 5th St. West	Industrial use; one building totaling approximately 350,640 SF on an 18.99- acre parcel	Info unavailable	Info unavailable	Info unavailable	350,640 SF
13. PA13-001	SWC of Lowe's Dr. and Rancho Vista Blvd.	4.91 acres into retail/commercial totaling 44,400 SF in 5 buildings	Info unavailable	Info unavailable	Info unavailable	44,400 SF
14. PA13-005	W of 10th St. West	Subdivide 34.8 acres into 167 condo lots and a recreation lot	Info unavailable	Info unavailable	Info unavailable	34.8 acres
Unincorporated Los Angeles County						
15. R2011-00798 Western Antelope Blue Sky	STW/Vic K Avenue, Del Sur	40 MW PV project and a 10,000 gallon water tank located in the A-2-5 zone	RCUP	Info unavailable	Info unavailable	157 acres
16. R2011-00799 American Solar Greenworks	0 VAC/COR G/70 STW Avenue, Antelope Acres	35 MW PV project and a 10,000 gallon water tank located in the A-2-2 zone	RCUP	Info unavailable	Info unavailable	135.6 acres
17. R2011-00807 Antelope Solar Greenworks	0 VAC/90 STW/VIC I9 Avenue, Del Sur	52 MW PV project and a 10,000 gallon water tank located in the A-2-2 zone	RCUP	Info unavailable	Info unavailable	256 acres

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
18. R2011-00833 North Lancaster Ranch	10455 West Avenue B, Lancaster	Proposed 20 MW PV project and a 10,000 gallon water tank	RZC	Info unavailable	Info unavailable	240 acres
19. R2012-00024 Quail Lake	0 VAC/290th Street East/ Avenue B, Lancaster	Solar energy generation facility	RCUP	Info unavailable	Info unavailable	Info unavailable
20. R2009-02239 AV Solar Ranch One	Avenue D and 170th St. West, Fairmont	240 MW PV project	RCUP			
21. R2012-00849 Rutan	Columbia Way and 20th St. West, Palmdale	4 MW PV project	RPP			
22. R2012-01589 West Antelope Solar Project	Avenue J and 112th St. West, Del Sur	20 MW PV project	RCUP			
23. R2010-00808 Antelope Valley Solar	Avenue B and 135th St. West, Fairmont	156 MW PV project	RCUP			
24. R2011-00801 Silver Sun Greenworks	Avenue I and 120th St. West, Del Sur	20 MW PV project	RCUP			
25. R2011-00805 Lancaster WAD	Avenue D and 35th St. West, Caliche	5 MW PV project	RCUP			

TABLE 3-5: CUMULATIVE PROJECTS LIST

Project Name/ Case ID	Project Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet
26. R2011-01290	50th St. W & W Avenue L, Quartz Hill, CA 93536	Construction, operation, and maintenance of an operations and maintenance facility for the Quartz Hill Water District	RCUP		3102026902	
27. Project 91055	Lakeview Dr. and El Camino Dr., Palmdale, CA	43 single-family residences on 1-acre- minimum lots	RENV		3054022006	



KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT
SANBORN SOLAR PROJECT

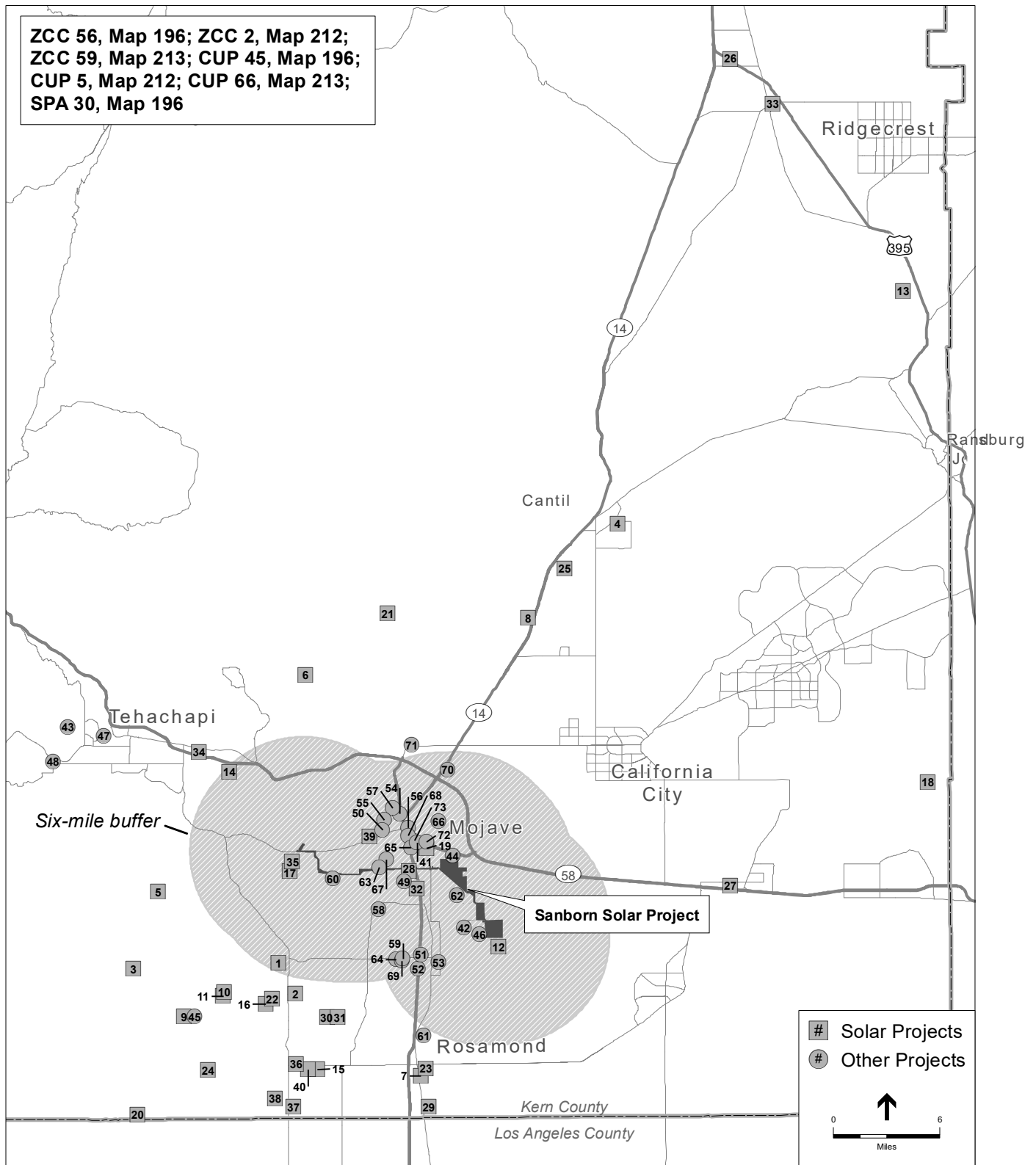


FIGURE 3-16: CUMULATIVE PROJECTS MAP

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4.1.1 Introduction

This section of the EIR discusses impacts associated with the potential for the project to degrade the existing visual character or quality of the project site and its surroundings through changes in the existing landscape. Potential effects are evaluated relative to important visual features (e.g., scenic highways, scenic features) and the existing visual landscape and its users. Degradation of the visual character of a site is addressed through a qualitative evaluation of the changes to the aesthetic characteristics of the existing environment, and the project-related modifications that would alter the visual setting. Visual simulations were created by VisionScape and illustrates various views of the project site after buildout of the project. In addition, the analysis for glare was partially based on the *Glare Analysis Report for the Sanborn Solar Project* (Dudek, 2019), which was prepared by Dudek, located in Appendix B of this EIR and incorporated by reference herein. The terms and concepts are used in the discussion below are used to describe and assess the aesthetic setting and impacts from the project.

Visual Concepts and Terminology

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

- *Viewshed* – defined as the surrounding geographic area from which the project is likely to be seen, based on topography, atmospheric conditions, land use patterns, and roadway orientations. “project viewshed” is used to describe the area surrounding a project site where a person standing on the ground or driving a vehicle can view the project site.
- *Key Observation Point (KOP)* – one or a series of points on a travel route or at a sensitive use area, such as a residence, where the view of a project would be the most revealing.
- *Scenic vista* – an area identified or known for high scenic quality. Scenic vistas may be designated by a federal, State, or local agency. Scenic vistas can also include an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing.
- *Scenic highway* – any stretch of public roadway that is designated as a scenic corridor by a federal, State, or local agency.
- *Sensitive receptors or sensitive viewpoints* – viewer responses to visual settings are inferred from a variety of factors, including distance and viewing angle, type of viewers, number of viewers, duration of view, and viewer activities. The viewer type and associated viewer sensitivity are distinguished among project viewers in recreational, residential, commercial, military, and industrial areas. Viewer activities can range from a circumstance that encourages a viewer to observe the surroundings more closely (such as recreational activities), to discouraging close observation (such as commuting in heavy traffic). Residential viewers typically have extended viewing periods and are generally considered to have high visual sensitivity. For this reason, residential views are typically considered sensitive. Viewers from public parks, recreational trails,

and/or culturally important sites also have high visual sensitivities; therefore, such locations are considered sensitive viewpoints. Viewers in commercial, military, and industrial areas are not typically focused on the views and the areas do not promote enjoyment of views; therefore, viewers in these locations are assumed to have low sensitivity.

- *Viewing distance zones* – the landscape is subdivided into three distance zones based on relative visibility from travel routes or observation points. The three zones are: foreground, middleground, and background. The foreground zone includes areas less than ¼ mile away, the middleground zone includes areas ¼ mile to 3 miles away, and the background zone includes areas beyond 3 miles (FHWA, 2015).
- *Visual sensitivity* – the overall measure of an existing landscape’s susceptibility to adverse visual changes. When viewing the same landscape, people may have different responses to that landscape and any proposed visual changes, based upon their values, familiarity, concern, or expectations for that landscape and its scenic quality. Because each person’s attachment to and value for a particular landscape is unique, visual changes to that landscape inherently affect viewers differently. Nonetheless, generalizations can be made about viewer sensitivity to scenic quality and visual changes.

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

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

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

4.1.2 Environmental Setting

Regional Character

The project site is located at the western edge of the Antelope Valley, in the southern central portion of Kern County, approximately 6 miles north of the Los Angeles County border. Cities within the Antelope Valley near the vicinity of the project site are the City of California City in Kern County and the Cities of Lancaster and Palmdale in Los Angeles County, which are approximately 9 miles northeast, 18 miles southeast, and 26 miles southeast of the project site, respectively.

The Antelope Valley encompasses approximately 2,400 square miles in northern Los Angeles County, southern Kern County, and western San Bernardino County. The region is on the south side of the Tehachapi Mountains, and is dominated by desert vegetation. Topography in the Antelope Valley is relatively flat, with elevations gradually rising towards the northwest, providing open, expansive views of hills and mountains that surround the valley. Land uses in the Antelope Valley include a mix of undeveloped land, agriculture, solar and wind energy production facilities and transmission facilities, low-density residential development, and other uses.

The aesthetic features of the Antelope Valley include the southeastern flank of the Tehachapi Mountains, characterized by terrain that gradually slopes from northwest to southeast. Existing development in the project vicinity includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance facilities, mining, wind and solar energy, and meteorological towers.

The Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail, or PCT) is designated as a National Scenic Trail, and located approximately 3.16 miles north of the generation tie (gen-tie) line corridor, approximately 8.5 miles northwest of the northern site, and approximately 14.6 miles northwest of the southern site. Visitors to this trail may be negatively affected by the visibility of the solar panels and other infrastructure present on the project site. Forest, parkland, and preserve areas in the vicinity of the project site include the Angeles National Forest located approximately 40 miles south; the Desert Pines Wildlife Sanctuary and the Arthur B. Ripley Desert Woodland State Park located approximately 26 miles to the southwest; and the Antelope Valley California Poppy Reserve located approximately 23 miles to the south.

There are several existing solar energy and transmission projects in the region where the project site is located that contribute to the regional character of the surrounding project area. The RE Columbia Solar Project, RE Columbia Two Solar Project, RE Columbia Three Solar Project, and RE Rio Grande Solar Project, approximately 1.5 miles to the west, were approved in 2011 and are currently operational. The Windhub Solar Project, approximately 8 miles to the west, is currently under construction. The locations of these existing solar projects in the vicinity of the project site are shown in Chapter 3, *Project Description*, Figure 3-5, *Surrounding Solar Projects*. The RE Columbia Solar Project, RE Columbia Two Solar Project, RE Columbia Three Solar Project, and RE Rio Grande Solar Project, in particular, are clustered near the gen-tie line corridor for the project, near SR-14. The SEPV Solar Project, approximately 7.5 miles to the west, is also currently operational. The Willow Springs Solar project is complete and is located approximately 16 miles southwest of the Project.

Local Character

The nearest populated areas to the project site are the unincorporated community of Mojave, the unincorporated community of Rosamond, and the City of Tehachapi, which are approximately 1.5 miles northeast, 7.5 miles southeast, and 14 miles northwest of the project site, respectively. The northern site is bordered (on the northern boundary) by two residential properties containing occupied residences. Scattered rural residences are located approximately 200 feet to the west and east of the southernmost portion of the southern site.

The project site is bounded by State Route (SR) 58 and the Mojave Air and Space Port to the north, open space to the east and the west, and Edwards AFB to the south, adjacent to the project site. The project site is primarily accessible by exiting SR-14 at Silver Queen Road. The northern site would be accessed from a private access easement along the alignment of Lone Butte Road or 10th Street from SR-58 and the southern site would be accessed by Silver Queen Road or Reed Avenue from United Street.

Elevations across the 2,006-acre project site range from approximately 2,660 feet above mean sea level in the northwest portion of the project site to approximately 2,500 feet above mean sea level in the southeast portion of the project site. Two small hills that reach an elevation of up to approximately 2,745 feet are located on the northern portion of the southern site. As described in more detail in Section 4.4, *Biological Resources*, the project site includes lands on the northern site that were previously disturbed for grazing activities and the southern site is undeveloped and comprised of both disturbed and undisturbed native and nonnative habitats. Vegetation communities present on the northern and southern sites and in the gen-tie line corridor include chenopod scrub (allscale alliance), Great Basin scrub (rubber rabbitbrush scrub alliance), Sonoran and Mojavean Desert scrub (cheesebrush alliance), and yellow-gold grasses. Patches of exposed soil dot the project site, and the low drab olive to greyish mounded desert shrubs in the area are occasionally. There are no structures within the project boundaries.

Scenic Highways

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, there are no Designated State Scenic Highways within Kern County (see Section 4.1.3, *Regulatory Setting*, below for more information on the State Scenic Highway Mapping System). The closest Eligible Scenic Highways are SR-58 (portion east of SR-14), located approximately 0.2 miles from the northern site and 2.3 miles from the southern site, and SR-14 (portion north of SR-58), located approximately 1.3 miles from the northern site and 5.5 miles from the southern site (Caltrans, 2017). Prominent views along SR-14 and SR-58 adding to the scenic elements in the landscape for motorists include panoramic views of the open Mojave Desert landscapes and surrounding mountains, including the Tehachapi Mountains, San Gabriel Mountains, and southeastern extent of the Sierra Nevada mountains. In addition to the State Scenic Highway Mapping System, the Kern County General Plan Circulation Element designates scenic routes and defines a scenic route as any freeway, highway, road, or other public right-of-way, which traverses an area of exceptional scenic quality and must be officially set as a Scenic Route by the Kern County Board of Supervisors or the State of California. As such, SR-58 and SR-14 are not officially designated State Scenic Highways and are not considered State Scenic Highways for this analysis. As part of the Circulation Element goals, policies, and implementation measures, Kern County adopted a Scenic Corridor Combining District to designate areas which contain unique visual and scenic resources as viewed from a major highway or freeway. The project site not within a Scenic Corridor Combining District.

Lighting Environment

The project site does not currently contain any lighting, and none of the dirt roads bordering or traversing the project site include street lighting. Minimal offsite fixed lighting in the area immediately surrounding the project site includes lighting fixtures associated with nearby residences, which contain small lighting fixtures installed on building exteriors, and main driveways or gates. These sources of lighting produce a limited amount of nighttime lighting. Located directly adjacent to and west of SR-14, existing wind turbine facilities, including the Rising Tree Wind Farm, and solar generating facilities, including the RE Columbia Solar Project, RE Columbia Two Solar Project, RE Columbia Three Solar Project, and RE Rio Grande Solar Project, contribute lighting and potential sources of glare. Required Federal Aviation Administration obstruction lighting tops wind turbines and the regular slow pulsing red lights operate during nighttime hours. The intensity of the lighting is somewhat low and does not illuminate the project site or land uses near the project site. The main source of nighttime lighting, is from motorists passing through the area with headlights on.

Solar Panel Glare Potential

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

A common misconception about solar photovoltaic (PV) panels is that they inherently cause or create “too much” glare, posing a nuisance to neighbors and a safety risk for pilots. In certain situations, the glass surfaces of solar PV systems can produce glint (a momentary flash of bright light) and glare (a reflection of bright light for a longer duration); however, light absorption, rather than reflection, is central to the function of a solar PV panel so that it may absorb solar radiation and convert it to electricity. Solar PV panels are constructed of dark-colored (usually blue or black) materials and are covered with anti-reflective coatings. Modern PV panels reflect as little as two percent of incoming sunlight, which is similar to water and less than soil and wood shingles. Some of the concern and misconception is likely due to the confusion between solar PV systems and concentrated solar power (CSP) systems. CSP systems typically use an array of mirrors to reflect sunlight to heat water or other fluids to create steam that turns an electric generator (Palmer and Laurent, 2014).

Despite their low potential to create glare, PV panels can reflect sunlight skyward toward the light source, creating a potential glare impact for aircraft in the area. The effect is similar to what a motorist experiences when the sun is low in the sky and the car passes between the sun and a glass-fronted building that has been treated with an anti-reflective coating. If the motorist is heading directly toward the building, the glare would be in the motorist’s eyes. Otherwise, the motorist would have to rotate his or her head to observe the glare off to the side. Because aircraft typically travel at a higher rate of speed than vehicles, the effect is momentary, lasting only as long as the angle between the sun, water body, and aircraft is maintained. Unless an aircraft were descending at an angle sloped directly at the solar array with the sun directly behind the aircraft, any glare that might occur from solar panels would be below the pilot’s horizon. In the project area, effects on eastbound motorists would likely be greatest in the early evening hours, when the sun is at its lowest arc in the western horizon. Glare would have its greatest impact on westbound travelers in the early morning hours, when the sun is rising in the east.

4.1.3 Regulatory Setting

Federal

National Scenic Byways Program

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

U.S. Department of the Interior, National Park Service, National Trails System Act

The National Trails System Act of 1969 seeks to preserve scenic and natural qualities along trails. The National Trails System Act assigns management responsibility for trails to various federal resource agencies, depending on which agency holds jurisdiction over the land on which the trail is located in a given area. The PCT was created under the National Trails System Act to provide for outdoor recreation opportunities and the conservation of significant scenic, historic, natural, or cultural qualities (National Park Service, 2016). PCT's southern terminus is on the U.S. border with Mexico, just south of Campo, California, and its northern terminus on the Canada–US border on the edge of Manning Park in British Columbia; its corridor through the U.S. is in the states of California, Oregon, and Washington. As stated previously, the PCT is located approximately 3.16 miles north of the gen-tie line corridor, approximately 8.5 miles northwest of the northern site, and approximately 14.6 miles northwest of the southern site. Views of the project components from the PCT would be limited given the project components are between 3 and 14 miles from the PCT and intervening topography between viewers along PCT and the project components would obscure views of the project components.

State

California Scenic Highway Program

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

As described in Section 4.1.2, *Environmental Setting*, there are no Designated State Scenic Highways within Kern County and the project site is not located directly adjacent to any eligible State Scenic Highway. The closest Eligible Scenic Highways are SR-58 (portion east of SR-14), located approximately 0.2 miles from the northern site and 2.3 miles from the southern site, and SR-14 (portion north of SR-58), located approximately 1.3 miles from the northern site and 5.5 miles from the southern site (Caltrans, 2017).

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to aesthetics. The policies, goals, and implementation measures in the Kern County General Plan related to aesthetics that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

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

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

The Kern County General Plan acknowledges the three routes identified as part of the California Scenic Highways Master Plan that are designated “Eligible State Scenic Highway” within the County. Route 1, which begins north of Mojave and continues to the Inyo County Line, consists of State Route 14 and State Highway 395. Route 2 consists of State Route 58 between Mojave and Boron. Route 3 consists of 5 miles of State Route 41 in northwest Kern County. The northern site of the project would be visible from Route 2. The Kern County General Plan provides general goals and policies for design features of development projects in order to reduce their impacts to scenic resources.

As SR-58 and SR-14 are not officially designated, they are not considered scenic highways for this analysis; therefore, no policies regarding development within Scenic Routes would be applicable to the project. However, the Kern County General Plan provides general goals and policies for design features of development projects in order to reduce their impacts to scenic resources. The policies and implementation measures in the Kern County General Plan for aesthetic resources applicable to the proposed project are provided below. The Kern County General Plan contains goals, policies, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

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

1.10.7 Light and Glare

Policies

- Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.
- Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

Implementation Measures

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

Chapter 5: Energy Element**5.4.7 Transmission Lines*****Goal***

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

Policy

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

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. There are no objectives, policies, or implementation measures in the Mojave Specific Plan that are applicable to aesthetics. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. There are no goals, policies, or implementation measures in the West Edwards Road Settlement Specific Plan that are applicable to energy. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detail and refined manner unique to a smaller area of the County. Since there are no applicable goals, policies, or implementation measures within the West Edwards Road Settlement Specific Plan, refer to the applicable policies, goals, and implementation measures of the Kern County General Plan above.

Kern County Zoning Ordinance***Chapter 19.81, Dark Skies Ordinance (Outdoor Lighting)***

In November 2011, Kern County approved a Dark Skies Ordinance. The purpose of this ordinance is to maintain the existing character of Kern County by requiring a minimal approach to outdoor lighting,

recognizing that excessive illumination can create a glow that may obscure the night sky and excessive illumination or glare may constitute a nuisance. The ordinance provides requirements for outdoor lighting within specified unincorporated areas of Kern County in order to accomplish the following objectives:

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

Kern County Development Standards

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

4.1.4 Impacts and Mitigation Measures

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

Methodology

The project's potential impacts to aesthetics have been evaluated using a variety of resources. In general, the potential aesthetic, light, and glare impacts associated with development projects are evaluated on a qualitative basis. This visual impact assessment is being utilized to identify and assess any potential long-term adverse visual impacts on aesthetics and visual resources that might result from implementation of the project during construction and operation. This assessment is based on the approved visual assessment practices employed by the FHWA (FHWA, 1981), the Bureau of Land Management (BLM) (BLM, 1978), the U.S. Forest Service (USFS, 1995), and other federal regulatory agencies. This method includes:

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

The evaluation of project impacts is based on professional judgment, analysis of the Kern County General Plan goals and policies related to visual resources, and the significance criteria established by CEQA *Guidelines*, Appendix G. More detailed information on the methodology behind the selection of KOPs and rating visual quality is provided below.

Selection of KOPs

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

The process of identifying KOPs focused on selecting viewpoints that could be used to accurately represent views from a broader range of viewpoints, particularly viewpoints from area sensitive receptors. The nature of solar fields, with large numbers of nearly identical and relatively low-lying PV panels, means that the views encountered from differing angles would often be quite similar. Sensitive receptors near the project site include motorist, due to the eligible state scenic designation of SR-14 and SR-58, and views to the project site available from rural scattered residences along local roads (i.e., Trotter Avenue). In addition, recreational users of the PCT are analyzed as sensitive receptors.

The familiarity with the view also influences how much attention is spent on the visual environment. Regular motorists may be highly familiar with the view and sometimes pay less attention; however, these motorists tend to be much more sensitive to changes in that view. People who are less familiar with the view may spend more time looking at the surrounding land, but would not notice changes in the view. The majority of existing motorists are likely to be residents driving to and from home. While SR-58 and SR-14 not officially designated State Scenic Highways, as they are eligible scenic highways, they were considered within the viewshed of the project that would attract recreational drivers.

The project site is located in a rural area. As described in Section 4.1.2, *Environmental Setting*, scattered rural residences are found surrounding the project site. Among these residents, those with direct views of the project site from their homes would tend to be the most sensitive to changes in the view. These residents tend to have much more familiarity with the existing viewshed and a heightened sensitivity to any visual changes within the landscape.

Five KOPs were selected for visual simulation to create post-development views. The evaluated KOPs are mapped on **Figure 4.1-1, Key Observation Point (KOP) Locations**, and described below in **Table 4.1-1, Key Observation Points**. The KOPs selected for simulation were chosen because they represent views residents, motorists, and recreational users would experience from their adjacent homes and local roadways, respectively, when viewing the project site. The selected KOPs represent views not only from the selected viewpoints, but also for other sensitive receptors throughout the project's vicinity.



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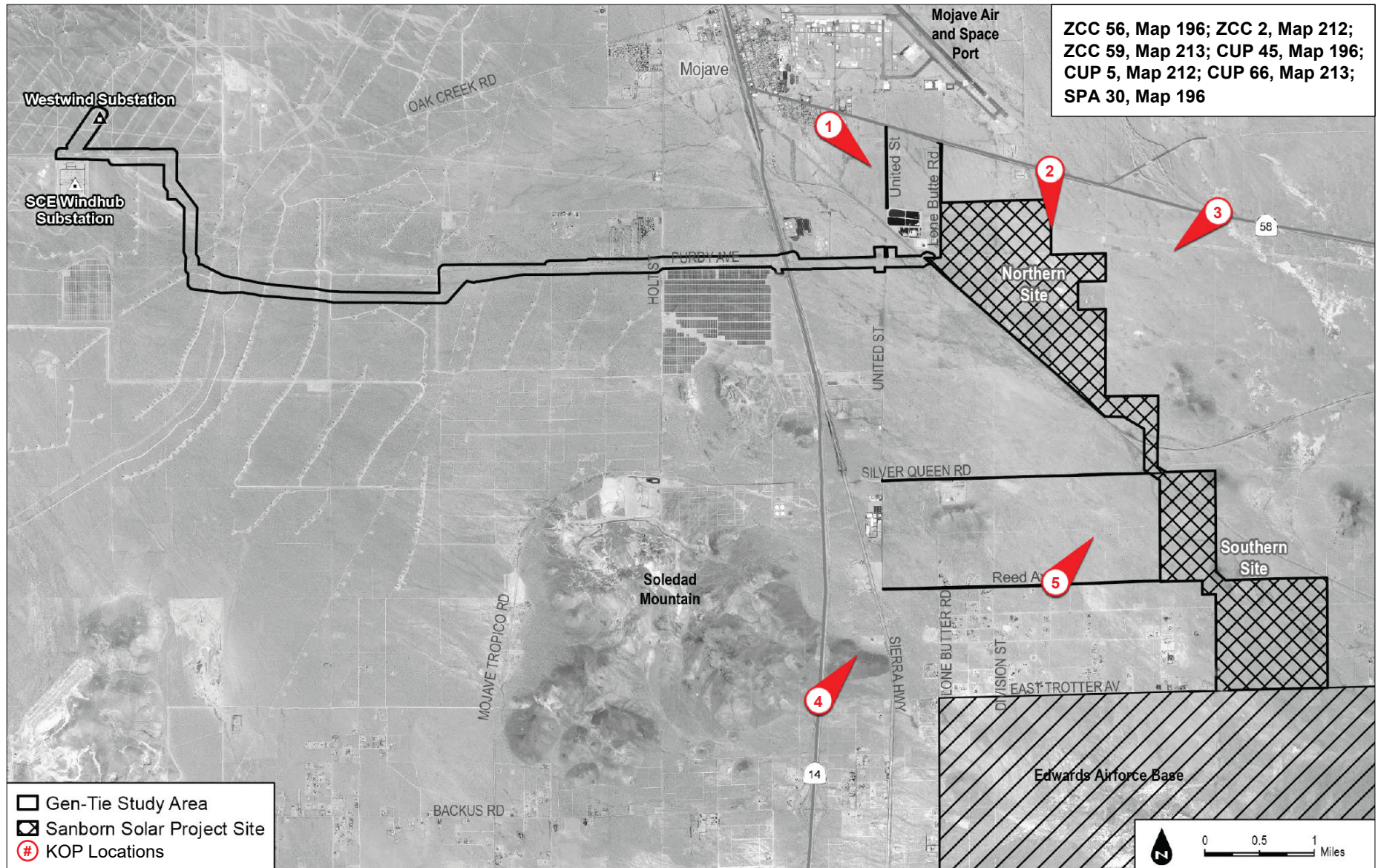


FIGURE 4.1-1: KEY OBSERVATION POINT (KOP) LOCATIONS

TABLE 4.1-1: KEY OBSERVATION POINTS

KOP	Location	Representative Sensitive Viewers
1	From west of United Street looking southeast toward the northern site.	Residents located near the northern site.
2	From eastbound travel lanes of SR-58 looking south towards the northern site.	Motorists on SR-58 as they pass the northern site, located approximately 0.2 miles away.
3	From eastbound travel lanes of SR-58 looking southwest toward the northern site.	Westbound motorists on SR-58.
4	From northbound travel lanes of SR-14 looking northeast toward the southern site.	Westbound motorists on SR-14.
5	From the intersection of Reed Avenue and 5th Street looking northwest towards the southern site.	Residents located near the southern site.

Simulation Preparation

Visual simulations of the project from the identified KOPs were prepared to provide a comparison of pre- and post-project conditions as well as context for qualitative description of the aesthetic changes that would result from the project. Photographs were taken during a site visit in June 2019 and simulations were prepared by VisionScape using the assumptions and methodologies listed in **Table 4.1-2, *Visual Simulation Methodology and Assumptions***, below.

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

TABLE 4.1-2: VISUAL SIMULATION METHODOLOGY AND ASSUMPTIONS

Photography from Key Observation Points	<ul style="list-style-type: none"> • Photos were taken on a hazy day with scattered clouds in June 2019. • Canon 5D digital camera with a 35 to 52 mm zoom
Visual simulation assumptions	<ul style="list-style-type: none"> • Solar modules would be up to 13 feet in height and separated by approximately 12 feet. • Modules on single axis tracking system were used to show the worst-case visual impact. • One substation is included, covering an area of 350 feet by 375 feet each. • Substation elements are typically 15 to 35 feet in height. • O&M building covering approximately 8,000 square feet with a height of 12 feet. • Energy storage facility would be approximately 30 feet in height. • Communication transmission tower transmission tower with maximum of 60 feet in height and a lightning protection mast, which would not exceed 75 feet in height • Gen-tie poles up to 185 feet in height. • Fencing is 6 to 8 feet in height, including chain link topped by barbed wire. • Module setbacks from property line ranges: South 74'-206', West 87'-370', North 63'-482', East 93'-144'
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 project planner. This includes identification of reference points with GPS coordinates and specific fields of vision for each view. Concurrently, the modeling team develops an exact computer model of the proposed solar modules to illustrate elevations. Natural and finished pads, including existing and surrounding contextual elements such as streets, terrain, pads, and adjacent buildings (where applicable), were used as a reference. Upon completion of the 3D modeling phase realistic materials, maps, and textures are then applied. The next phase is assembly, during which the modeling is inserted into photographs taken during the field study using a full frame camera and camera match technology. 3D pads and boundary outlines are used to situate the modules to the proposed positions as shown on the cad provided. During this process, a computer model camera is aligned with the onsite photography to depict the project setting within each view. Lastly, a proposed landscape concept is applied (where applicable) and final artistic touches are made to ensure accuracy, and that the look and feel is consistent with the vision of the project. GPS and Camera Match Technology includes the use of a Trimble GeoXT (Sub-Meter) GPS device and a "Full Frame" digital camera for documenting coordinates at requested station points.</p>

Rating Visual Quality

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

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

1. The **landform** component of the visual quality rating criteria takes into account the fact that topography becomes more interesting visually as it gets steeper or more massive, or more severely

or universally sculptured. Outstanding landforms may be monumental, (as found in Yosemite Valley), or they may be exceedingly artistic and subtle (such as certain badlands, pinnacles, arches, and other extraordinary formations).

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

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

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

TABLE 4.1-3: VISUAL QUALITY RATING SYSTEM

Key Factors	Rating Criteria and Score					
Landform	High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops, or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers.	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features which are interesting though not dominant or exceptional.		Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features.		
	Score 5	Score 3		Score 1		
Vegetation	A variety of vegetative types as expressed in interesting forms, textures, and patterns.	Some variety of vegetation, but only one or two major types.		Little or no variety or contrast in vegetation.		
	Score 5	Score 3		Score 1		
Water	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape.	Flowing, or still, but not dominant in the landscape.		Absent, or present but not noticeable.		
	Score 5	Score 3		Score 1		
Color	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water or snow fields.	Some intensity or variety in colors and contrast of the soil, rock, and vegetation, but not a dominant scenic element.		Subtle color variations, contrast, or interest; generally mute tones.		
	Score 5	Score 3		Score 1		
Influence of Adjacent Scenery	Adjacent scenery greatly enhances visual quality.	Adjacent scenery moderately enhances overall visual quality.		Adjacent scenery has little or no influence on overall visual quality.		
	Score 5	Score 3		Score 1		
Scarcity	One of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc.	Distinctive, though somewhat similar to others within the region.		Interesting within its setting but fairly common within the region.		
	Score 5*	Score 3		Score 1		
Cultural Modifications	Modifications add favorably to visual variety while promoting visual harmony.	Modifications add little or no visual variety to the area, and introducing no discordant elements.		Modifications add variety but are very discordant and promote strong disharmony.		
	Score 2	Score 0		Score -4		

NOTES:

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

SOURCE: BLM 1986

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

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

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

Thresholds of Significance

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

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

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

Project Impacts

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

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

There are no local areas that are designated as scenic vistas within the vicinity of the project site. However, the PCT, an important regional recreational facility and long-distance hiking and equestrian trail, is located approximately 3.16 miles north of the gen-tie line corridor, approximately 8.5 miles northwest of the northern site, and approximately 14.6 miles northwest of the southern site in the foothills of the Tehachapi Mountains. The areas surrounding the project site have been heavily modified, with new solar panel facilities, including the RE Columbia Solar Project, RE Columbia Two Solar Project, RE Columbia Three Solar Project, and RE Rio Grande Solar Project, located approximately 1.5 miles to the west, as discussed in Section 4.1.2, *Environmental Setting*, above. While implementation of the project would add new manmade elements to views from the PCT, due to the distance of the project site from the PCT trail along with intervening topography, would result in limited distant views of project components. Distance from the PCT combined with intervening topography and the existing visual setting including solar, wind and transmission facilities would result in the project producing no noticeable impact to views from the PCT.

The Windhub Substation and the project gen-tie interconnection to the substation are located within 4 miles of the PCT. Traversing a modified mountainous and desert landscape, the PCT is separated from the gen-tie line corridor by numerous rows and strings of wind turbines, electrical infrastructure development, and the Windhub Substation. The PCT is similarly separated from the northern and southern sites by wind turbines, electrical transmission infrastructure, solar development, and developed uses in the community of Mojave. In addition, views to the solar sites from the PCT would be blocked by an intervening ridgeline topped by a single row of tall wind turbines.

While the northern and southern sites may be visible from higher elevation segments of the PCT, project distance, topography, and intervening development would reduce the visual prominence of the proposed solar development. Due to the developed nature of the landscape visible from the PCT in the general project area, project development would not have a substantial adverse effect on existing views from the PCT. Therefore, impacts to scenic vistas would be less than significant and no mitigation would be required.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

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

The project would not be visible from any Officially Designated State or County Scenic Highway. Although both SR-58 east of Mojave and SR-14 north of Mojave are designated as eligible State Scenic Highways (Caltrans, 2017), they have not yet been Officially Designated. However, the following analysis is provided for informational purposes.

Views to the northern and southern sites are available to from SR-58, but generally, the project site would not be clearly visible from SR-14. As stated above, from north of Mojave to the Inyo County Line, SR-14 is an eligible state scenic highway. Development is relatively scarce along this segment of the state highway; however, due to the presence of clustered development around the community of Mojave, distance, and intervening terrain and vegetation, the northern and southern sites would not be clearly visible from the eligible scenic segment of SR-14.

The eligible scenic segment of SR-58 within the County is approximately 31 miles in length from SR-14 near Mojave east to Boron. Views along this segment of SR-58 where the project site is located are more developed in nature. Significant trees, rock outcroppings, and historic buildings are also not located on the northern and southern sites or within the proposed gen-tie line corridor. Components of the project would not substantially alter existing long-distance views of the mountain and valley landscape or other natural features visible from the designated scenic segments of SR-58. Project fencing and solar panels would generally display a low vertical profile and would be located at a lower elevation than motorists on SR-58. As a result, solar panels and fencing would not substantially obstruct or interrupt available views to mountainous terrain or other scenic features. In addition to panels and fencing, the on-site collector substation, energy storage facility, O&M facility and gen-tie line would be located on the northern site and would be potentially visible from SR-58. The on-site collector substation (components up to 75 feet high), the energy storage facility building (approximately 30 feet high), and gen-tie poles (concrete poles up to 185 feet high and spaced every 600 feet) would be located at a lower elevation than SR-58 motorists and setback approximately 0.5 miles or greater from the state route. The lower lying location of these components and the provided setbacks would reduce the visual prominence of the substation, energy storage facility, and gen-tie poles in available views to motorists. Therefore, construction of the proposed project would not change the viewshed from any Officially Designated State or County Scenic Highway and impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.1-3: The project would, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage points) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.

As described in Chapter 3, *Project Description*, and above in Section 4.1.2, *Environmental Setting*, existing development in the project vicinity includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance facilities, mining, electrical transmission infrastructure, wind and solar energy, and meteorological towers. As the project is located within a nonurbanized area, the analysis below will focus on whether development of the project would substantially change the existing visual character or quality of public views of the site and its surroundings.

Construction

Construction activities associated with the project would create temporary changes in views of the project site. Furthermore, construction activities would introduce a considerable amount of heavy equipment, including backhoes, compactors, tractors, and trucks, into the viewshed of all viewer groups. During construction, there would be multiple crews working on the site with various equipment and vehicles, including special vehicles for transporting the modules and other equipment. The influx of construction vehicles, equipment, and worker vehicles would create visible contrast within the rural and primarily undeveloped setting of the northern and southern sites. However, vehicles, equipment, and construction activity would be temporary in nature (18 to 30 months) and would be limited to active areas of construction as opposed to the entirety of the northern and southern sites at the same time.

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

Operation

In order to determine whether the project would substantially degrade the existing visual quality of the project site, this analysis compares the existing visual setting with visual simulations of the post-project visual conditions. As described above, five KOPs were selected for visual simulation. These KOPs are representative of views that would be experienced from numerous sensitive receptor locations.

Visual simulations are provided in **Figures 4.1-2 through 4.1-6**, below. KOPs are described below in **Table 4.1-2, *Visual Simulation Methodology and Assumptions***. Impacts associated with operation of the project would vary by viewer location and are discussed below by KOP. The rating system and impacts methodology are discussed in the “Rating Visual Quality” section above.

KOP 1. Figure 4.1-2, KOP 1 – Existing and Simulated Views from Victor Avenue Looking Southeast Towards the Northern Site, shows views from Victor Avenue which is located just south of SR-58. This KOP reflects views to the northern site that would be experienced by area residents located in proximity to

the northern site. At KOP 1, the northern site is located 1.5 miles away. The pre-development views from KOP 1 shows that the landscape is relatively flat and covered with low-lying desert shrubs in the foreground and middle ground. Dark and conical hills are visible in the middle ground and limited mountainous terrain of the San Gabriel Mountains is visible in the background to the southeast. No development is shown within this viewpoint. The post-development view from KOP 1 (see Figure 4.1-2) would include relatively faint modifications (i.e., solar arrays) that would be located low in the middle ground landscape. The solar panels and associated elements would be dark to light grey in color, which would contrast with the existing muted earth tones in the foreground and background, and the thin vertical lines of gen-tie support structures would be light and greyish. As discussed below in **Table 4.1-4, Visual Quality Rating Analysis – KOP 1**, the predevelopment score is 11, and the post-development score is 8. Since the difference in scores would be 2 points, visual impacts from KOP 1 are potentially significant.

KOP 2. Figure 4.1-3, KOP 2 – Existing and Simulated Views from SR-58 Looking South towards the Northern Site, shows views from eastbound SR-58 looking south toward the northern site. This KOP accurately reflects views that state route motorists would experience as they pass the northern site (located approximately 0.2 miles away). The pre-development views from KOP 2 depicts broad and flat terrain covered with mounded grey and brown shrubs and low golden grasses in the foreground and middle ground. A portion of an auto body shop is visible in the middle ground of the southeastern portion of this viewpoint. Tan hills rise from the otherwise flat terrain the middle ground and low dark brown mountain range is visible in the distance. The post-development view from KOP 2 (see Figure 4.1-3) would include the low and dark horizontal line displayed by numerous rows of solar panels. Solar arrays would interrupt the long view across the valley terrain to the south and would create noticeable color contrast. Moreover, the introduction of numerous gen-tie structures would increase the volume of straight, thin, vertical features present in the view. As discussed below in **Table 4.1-5, Visual Quality Rating Analysis – KOP 2**, the pre development score is 12, and the post-development score is 8. Since the difference in scores would be 4 points, visual impacts from KOP 2 are potentially significant.

KOP 3. Figure 4.1-4, KOP 3 – Existing and Simulated Views from SR-58 Looking Southwest towards the Northern Site, shows views from the westbound travel lanes of SR-58 looking southwest toward the northern site. This KOP accurately reflects views to the northern site (located approximately 1.25 miles away) that westbound state route motorists would experience. The pre-development views from KOP 3 depicts broad and flat terrain with a wired fence, power poles and electrical lines, brown shrubs, and golden grasses in the foreground, and brown shrubs and golden grasses in the middle ground. Development associated with the community of Fleta and Soledad Mountain are visible in the background with mountains visible in the distance. The post-development view from KOP 3 (see Figure 4.1-4) would include rows of solar panels as well as gen-tie line and support structures. These components of the project would be visible in this viewpoint, but faint and tend to recede into the background landscape. As discussed below in **Table 4.1-6, Visual Quality Rating Analysis – KOP 3**, the pre-development score is 12, and the post-development score is 10. Since the difference in scores would be 2 points, visual impacts from KOP 3 are potentially significant.

KOP 4. Figure 4.1-5, KOP 4 – Existing and Simulated Views From SR-14 Looking Northeast towards the Southern Site, shows views from the southbound travel lanes of SR-14 looking northeast towards the southern site (located approximately 3.5 miles away). This KOP accurately reflects views to the project site that motorists travelling on SR-14 would experience. The pre-development views from KOP 4 depict relatively flat terrain with low shrubs and SR-14 visible in the foreground and more low shrubs, grass, development and power poles and electrical lines visible in the middle ground. The background includes views of tan hills and faint views of mountain ranges can be seen in the distance. The post-development view from KOP 4 (see Figure 4.1-5) would include relatively faint modifications (i.e., solar arrays) that

would be located low in the middle ground landscape. As discussed below in **Table 4.1-7, *Visual Quality Rating Analysis – KOP 4***, the pre-development score is 11, and the post development score is 7. Since the difference in scores would be 4 points, visual impacts from KOP 4 are potentially significant.

KOP 5. Figure 4.1-6, *KOP 5 – Existing and Simulated Views from Reed Avenue and 5th Street Looking Northeast towards the Southern Site*, shows views from intersection of Reed Avenue and 5th Street looking northeast toward the southern site (located approximately 1.25 miles away). This KOP accurately reflects views to the project site experienced by area residents located near the southern site. The pre-development views from KOP 5 depict relatively flat terrain covered with low tan and green shrubs in the foreground. Joshua trees dot the middle-ground terrain. Several conical hills in the middle ground are visible, and the dark, low silhouette of mountains are detectable to the northeast in the background. Existing cultural modifications in the view consist of dirt roads (Reed Avenue and 5th Street) with visible depressions from use. The post-development view from KOP 5 (see Figure 4.1-6) would primarily consists of repeating rows of dark solar modules as well as gen-tie line and support structures located in the middle ground of this viewpoint. As discussed below in **Table 4.1-8, *Visual Quality Rating Analysis – KOP 5***, the pre-development score is 12, and the post development score is 8. Since the difference in scores would be 4 points, visual impacts from KOP 4 are potentially significant.

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Existing View

ZCC 56, Map 196; ZCC 2, Map 212;
ZCC 59, Map 213; CUP 45, Map 196;
CUP 5, Map 212; CUP 66, Map 213;
SPA 30, Map 196



Proposed View



**FIGURE 4.1-2: KOP 1 - EXISTING AND SIMULATED VIEWS FROM VICTOR AVENUE
LOOKING SOUTHEAST TOWARDS THE NORTHERN SITE**

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

Sensitive Receptor: Residents located west of the northern site. Pre-development and post-development conditions are depicted in Figure 4.1-2.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	2	1	1	Less than Significant
<i>Explanation:</i> Relatively flat terrain covered with low-lying desert shrubs with dark and conical hills in the middle ground and limited mountainous terrain in the background. The flat topography of the area would not be noticeably modified by project development except with installation of the gen-tie support structures.				
<i>Detail:</i> Flat landforms dominate the foreground and middle ground of the visible landscape and hills and mountains area elements of interest. The low height of solar arrays on the northern site would not obstruct or substantially interrupt views of hills and mountains; however, the gen-tie support structure, while it would not obstruct views of interrupt view of the hills, would add to view shed. There would be a less than significant impact to landforms resulting from project operations.				
Vegetation	3	3	0	No Impact
<i>Explanation:</i> Low, mounded desert shrub vegetation; similar species present in the visible landscape. Desert shrub vegetation would be removed from the solar sites in the middle ground, but effects would be obscured by distance.				
<i>Detail:</i> Both the pre- and post-development views depict low, mounded desert shrub vegetation covering the valley floor. Removal of vegetation in the middle ground due to project development would not be noticeable due to distance. Contrast associated with vegetation removal would not be prominent, and as viewed from KOP 1, low and mounded desert shrub vegetation would continue to cover the valley. No impacts to vegetation would occur.				
Water	1	1	0	No Impact
<i>Explanation:</i> No water is present on the site or in the vicinity. Project development would not be introduce water to or remove water from the visible landscape.				
<i>Detail:</i> Water features are not included in pre- or post-development views. No impacts to water features would occur.				
Color	2	1	1	Less than Significant
<i>Explanation:</i> Shades of brown, yellow, and green on the valley floor across the foreground and middle ground (associated with soil and vegetation). Grey associated with soil and distant mountains. Solar arrays would display a low and thin black horizontal band in the middle ground. These colors would contrast with the muted earth tones in the foreground and middle ground.				

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

Sensitive Receptor: Residents located west of the northern site.				
Pre-development and post-development conditions are depicted in Figure 4.1-2.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
<i>Detail:</i>	Muted earth tones of brown, green and yellow dominate the foreground and middle ground. Visible solar arrays would introduce a simple horizontal band of black color to the middle ground that would be easy to overlook. The lightly colored, vertical lines of gen-tie structures would be faint, but visibility would be enhanced on a clear day with a blue sky backdrop. Background colors would not be altered or substantially obstructed from view. Impacts associated with color would be less than significant.			
Adjacent Scenery	2	2	0	No Impact
<i>Explanation:</i>	Middle ground hills and distant mountains to the southeast enhance the view.	Hills and mountains would remain visible and would not be substantially obstructed by project components.		
<i>Detail:</i>	The project would not modify, substantially obstruct, or interrupt views of adjacent scenery. Less-than-significant impacts to views of adjacent scenery would result.			
Scarcity	1	1	0	No Impact
<i>Explanation:</i>	The available view is broad but somewhat limited by middle ground hills. There are no unique aspects from this view. Similar views exist throughout the region.	Views would be slightly modified by industrial development in the middle ground.		
<i>Detail:</i>	Existing views offered from Victor Avenue are typical of the area. Visible features are not particularly unique or unusual. Alteration of the landscape to accommodate the project would not result in visually significant impacts to view scarcity.			
Cultural Modifications	0	-1	1	Less than Significant
<i>Explanation:</i>	Cultural modifications include a paved road and transmission lines, and denuded terrain (located to the east).	Project development would add low-profile solar arrays and faint, vertical gen-tie support structures to the project area.		
<i>Detail:</i>	Existing cultural modifications are not particularly prominent, and the features are compatible with rural elements in the surrounding area. Project components would be added to the landscape, but due to the low form and dark color of solar arrays and the faint lines associated with the gen-tie, the addition of cultural modifications to the middle ground of KOP 1 would result in less-than-significant impacts.			
Totals:	11	8	3	Potentially Significant



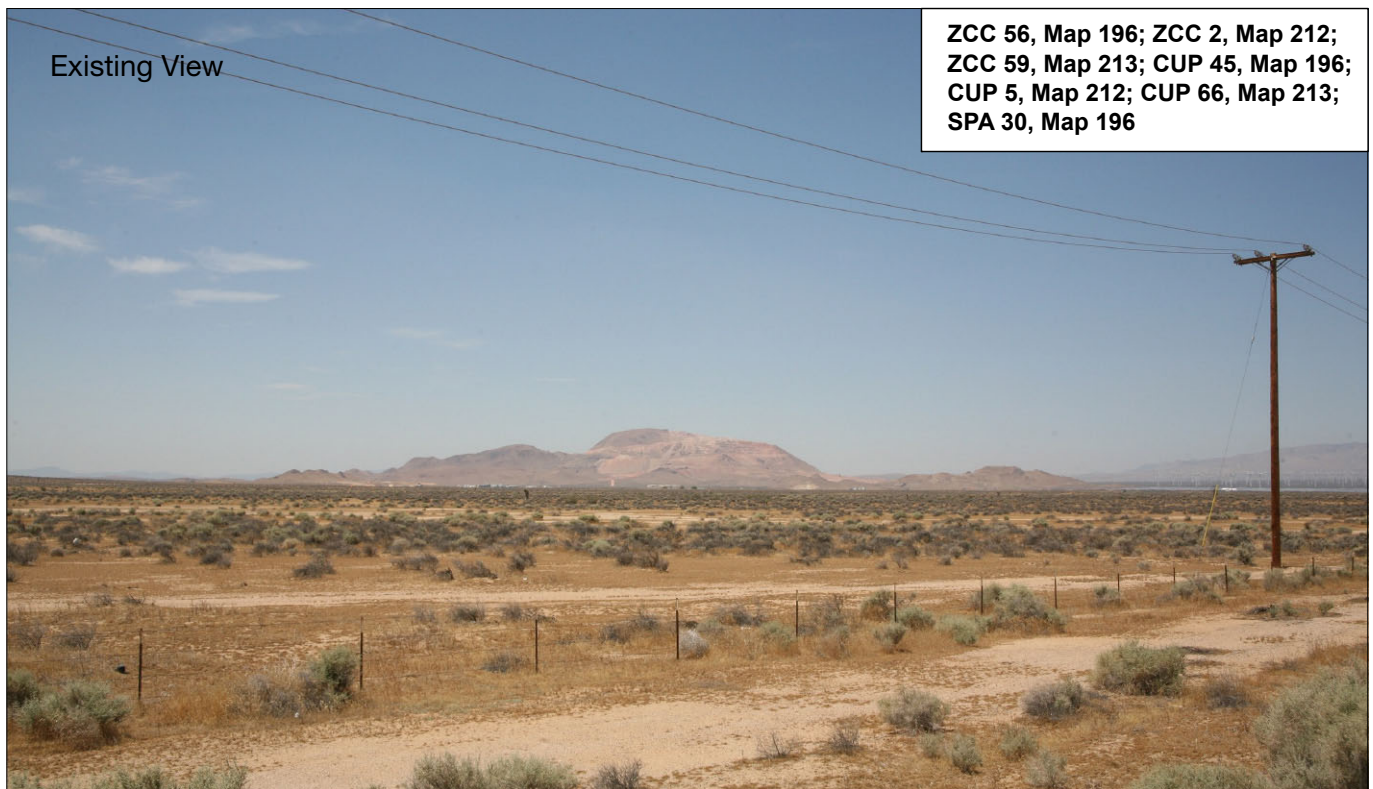
**FIGURE 4.1-3: KOP 2 - EXISTING AND SIMULATED VIEWS FROM SR-58
LOOKING SOUTH TOWARDS THE NORTHERN SITE**

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

Sensitive Receptor: Motorists on SR-58 as they pass the northern site. Pre-development and post-development conditions are depicted in Figure 4.1-3.				
Rated Feature	Pre-development Score	Post-development Score	Difference in Scores	Impact Significance
Landform	3	2	1	Less than Significant
<i>Explanation:</i> Broad and flat terrain in the foreground with tan hills in the middle ground and a low, dark brown mountain range in the distance. <i>Detail:</i> The pre- and post-development view is dominated by flat valley terrain in the foreground, tan hills to the southeast in the middle ground and a distant mountain in the background. Views of the project would be limited to the northern site and gen-tie line. Solar arrays are prominent in the middle ground. As such, Project development would noticeably modify landforms in the view. However, as there is existing development with the auto body shop in the middle ground, impacts to landforms would be less than significant.				
Vegetation	3	3	0	No Impact
<i>Explanation:</i> Low and mounded desert shrub vegetation covers the foreground and middle ground terrain. <i>Detail:</i> Removal of vegetation in the middle ground due to project development would not be visible. Solar arrays installed on the northern site would be detectable in views, but the effects associated with vegetation removal would be obscured due to distance and the normal viewing angle to the project site available at KOP 2. Resulting contrast would not be noticeable, and therefore, no impacts to vegetation would occur				
Water	1	1	0	No Impact
<i>Explanation:</i> No water is visible on site or in the surrounding area. <i>Detail:</i> Water features are not included in pre- or post-development views. No impacts to water features would occur.				
Color	2	1	1	Less than Significant
<i>Explanation:</i> Shades of yellow, green and brown are display by soil and vegetation, which dominate the foreground and middle ground. Tan hills and low dark brown mountains rise from the valley. Development is grey, black, and white (auto body shop). The dark color of solar arrays would contrast with the drab tones displayed by terrain and vegetation in the foreground. The light greyish color of gen-tie support poles and lines would also contrast with the green and browns of desert vegetation. Color contrast would be enhanced when viewed against the backdrop of a blue desert sky.				

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

Sensitive Receptor: Motorists on SR-58 as they pass the northern site. Pre-development and post-development conditions are depicted in Figure 4.1-3.				
Rated Feature	Pre-development Score	Post-development Score	Difference in Scores	Impact Significance
<i>Detail:</i> Pre- and post-development views are and would continue to be dominated by earth tones. The dark line displayed by solar arrays would be noticeable in views but would be similar in tone to the color displayed by low mountains in the view.				
Adjacent Scenery	2	2	0	No Impact
<i>Explanation:</i> Views of the flat desert terrain are enhanced by hills and mountains to the south. Hills and mountains would remain visible. Visible solar arrays and fencing would not block hills or mountains from view.				
<i>Detail:</i> The project would not modify, substantially obstruct, or interrupt views of adjacent scenery. Less than significant impacts to views of adjacent scenery would result.				
Scarcity	1	1	0	No Impact
<i>Explanation:</i> The eastern extent of the broad view is limited by middle ground hills. There are no particularly unique or unusual aspects in the view, and similar views are present throughout the region. The middle ground would be modified by the introduction of solar arrays and the gen-tie line. The proximity of existing solar and wind development to the project site creates similarly modified views in the area.				
<i>Detail:</i> The view from SR-58 is typical of views available throughout the area and landforms and vegetation are not particularly unique or unusual. Landscape modification resulting from project development would result in less than significant impacts to view scarcity.				
Cultural Modifications	0	-2	2	Potentially Significant
<i>Explanation:</i> Cultural modifications include paved roads, electrical transmission lines, and automobiles from the auto body shop. Project development would add low-profile and dark solar arrays, regularly spaced and vertical gen-tie support structures, and horizontal gen-tie lines to the project area and existing views.				
<i>Detail:</i> An auto body shop is visible in the middle ground. The introduction of solar arrays would be evident by the low and dark horizontal line displayed by panels in the middle ground, behind the auto body shop. Numerous faint to clear gen-tie line support structures would be visible from KOP 2, and the thin vertical lines would be difficult to overlook. Therefore, the addition of cultural modifications to the middle ground of KOP 2 would result in less than significant impacts				
Totals:	12	8	4	Potentially Significant



**FIGURE 4.1-4: KOP 3 - EXISTING AND SIMULATED VIEWS FROM SR-58
LOOKING SOUTHWEST TOWARDS THE NORTHERN SITE**

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

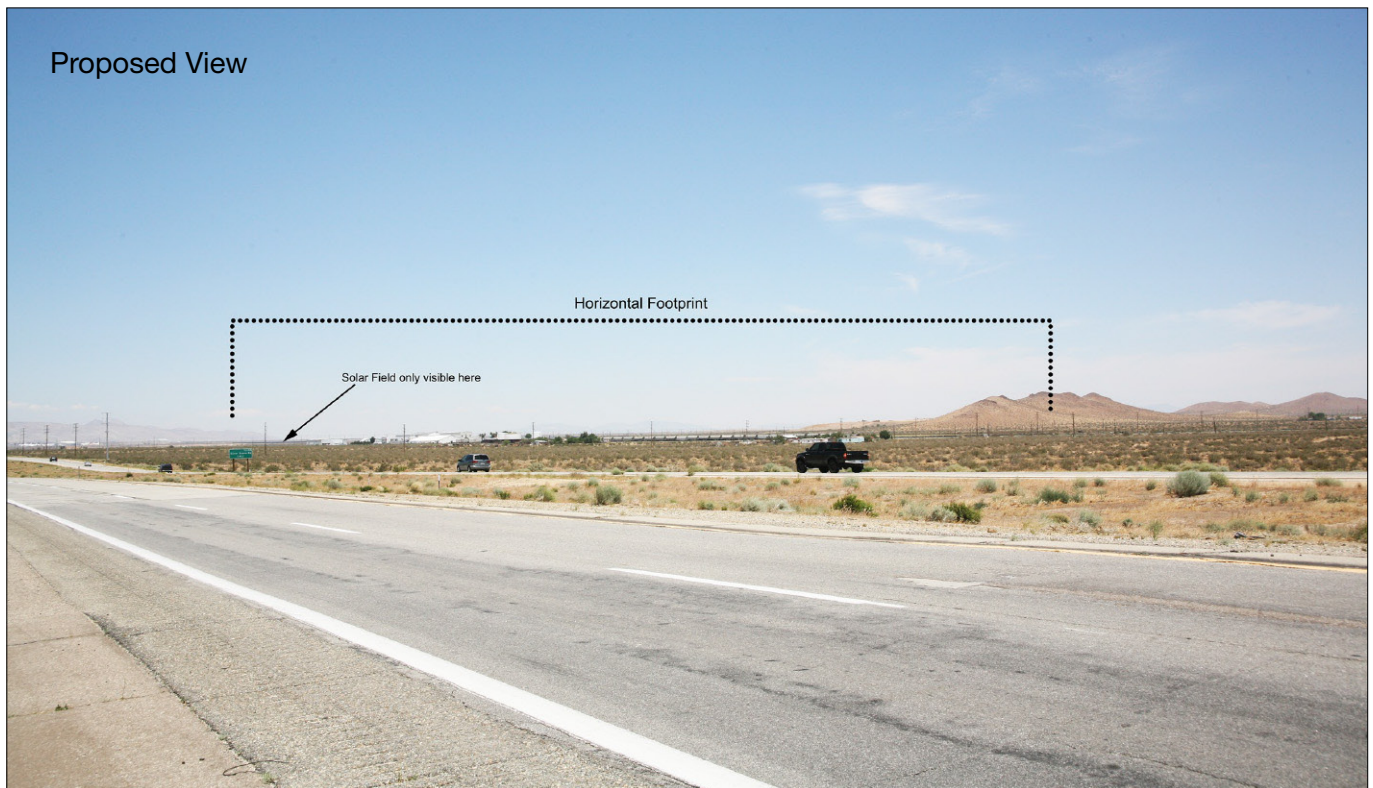
Sensitive Receptor: Motorists traveling westbound on SR-58. Pre-development and post-development conditions are depicted in Figure 4.1-4.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	2	2	0	No Impact
<i>Explanation:</i> Broad and flat terrain in the foreground and middle ground with Soledad Mountain in the background and a line of relatively low mountains in the distance. The flat topography of the area would not be noticeably modified by project development.				
<i>Detail:</i> Broad and flat landforms dominate the foreground and middle ground of the visible landscape. However, Soledad Mountain can be seen in the background with low mountains in the distance. Mountains add interest to the otherwise low and flat landscape. Project elements including solar arrays and gen-tie lines are not easily identifiable within this viewpoint. There would be no impact to landforms resulting from project operations.				
Vegetation	3	3	0	No Impact
<i>Explanation:</i> Low and mounded desert shrubs cover the valley terrain; little variation in vegetation is visible. Solar arrays would replace a large area of vegetation in the landscape and would interrupt nearly continuous views of low and mounded shrub vegetation covering the desert terrain. Vegetation removal associated with installation of gen-tie structures would not be visible.				
<i>Detail:</i> The visual effects of vegetation removal would generally be masked by solar arrays on the northern site. Therefore, no impacts to vegetation would occur.				
Water	1	1	0	No Impact
<i>Explanation:</i> No water is visible on site or in the surrounding area. Project development would not introduce water to or remove water from the visible landscape.				
<i>Detail:</i> Water features are not included in pre- or post-development views. No impacts to water features would occur.				
Color	2	2	0	Less than Significant
<i>Explanation:</i> Foreground and middle-ground terrain and vegetation display shades of yellow, green, and brown. Soledad Mountain in the background includes shades of brown and tan and mountains in the distance appear to be hazy dark brown to dark grey/blue. Small and white rectangular structures from the community of Fleta are visible in the middle ground but are not dominant. A low and dark horizontal line would be created by solar arrays in the middle ground that would stretch across the entire extent of this viewpoint.				

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

Sensitive Receptor: Motorists traveling westbound on SR-58. Pre-development and post-development conditions are depicted in Figure 4.1-4.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
<i>Detail:</i> The foreground and middle ground are dominated by shades of yellow, green, and brown. Grey shrubs are visible in the foreground but become less numerous on the middle ground. Solar arrays on the northern site would display dark grey/blue color that would contrast with the characteristic color of desert soils, shrubs, and grasses. Gen-tie structures and lines would be visible but would appear faint due to distance. At KOP 3, gen-tie components would be submissive features in the landscape.				
Adjacent Scenery	3	3	0	Less than Significant
<i>Explanation:</i> Views are enhanced by Soledad Mountain in the background and mountains in the distance.				
Hills and mountains would remain visible. Solar arrays, fencing, gen-tie components, and other project components, which are faintly visible from this viewpoint, would not block hills or mountains from view.				
<i>Detail:</i> Visibility of hills and mountains would not be altered by project development. Impacts would be less than significant.				
Scarcity	2	1	1	Less than Significant
<i>Explanation:</i> Soledad Mountain is visible from this viewpoint.				
Solar arrays, the collector substation and O&M building, energy storage facility, and gen-tie would be visible from SR-58 and would modify the existing, landscape view in this area.				
<i>Detail:</i> The existing view of Soledad Mountain from SR-58 is unique to this viewpoint. However, while Project development would reduce the availability of long views of desert terrain, the Project would not disrupt views of Soledad Mountain and this would continue to be available along the SR-58 corridor; therefore, impacts to view scarcity would be less than significant.				
Cultural Modifications	-1	-2	1	Less than Significant
<i>Explanation:</i> The landscape contains limited cultural modifications; however, white and rectangular structures in the middle ground associated with the community of Fleta create visible (albeit easily overlooked) color contrast.				
The project would introduce numerous manufactured elements to the middle ground, including solar arrays and inverters, the gen-tie and support structures, the collector substation, the energy storage facility, and O&M building. However, these Project components are faintly visible from this viewpoint.				

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

Sensitive Receptor: Motorists traveling westbound on SR-58. Pre-development and post-development conditions are depicted in Figure 4.1-4.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
<i>Detail:</i>	The landscape is generally free of cultural modifications, and those in the middle ground are not visually prominent. Instead, desert vegetation and the flat to hilly to mountainous terrain are prominent, and the view is open and long. The project would introduce solar development and ancillary components to the middle ground. Solar arrays, the gen-tie line and structures, the collector substation, energy storage facility, and the O&M building would attract attention and create form, line, and color contrast. However, these project components are faintly visible from this viewpoint. Visual impacts associated with cultural modifications would be less than significant.			
Totals:	12	10	2	Potentially Significant



**FIGURE 4.1-5: KOP 4 - EXISTING AND SIMULATED VIEWS FROM SR-14
LOOKING NORTHEAST TOWARDS THE SOUTHERN SITE**

TABLE 4.1-7: VISUAL QUALITY RATING ANALYSIS – KOP 4

Sensitive Receptor: Motorists traveling westbound on SR-58. Pre-development and post-development conditions are depicted in Figure 4.1-4.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	3	3	0	Less than Significant
<i>Explanation:</i> Flat terrain in the foreground with several hills in the middle ground. Low and dark silhouettes of mountains to the northeast in the background. The flat topography of the area would not be noticeably modified by project development. However, solar modules would slightly modify existing views of middle-ground hills.				
<i>Detail:</i> Flat landforms and hills occupy the foreground and middle-ground landscape. The hills display a unique conical form that adds interest to the low and flat landscape. Gen-tie structures would be faintly visible, but would not be prominent. The project would not substantially alter or modify existing landforms in the view.				
Vegetation	3	2	1	Less than Significant
<i>Explanation:</i> Low and mounded desert shrubs cover the foreground and middle ground terrain. The development of solar modules and other components would replace existing desert shrubs; however, removal of vegetation is not visible from this viewpoint.				
<i>Detail:</i> The visual effects of vegetation removal would generally be masked by solar arrays on the southern site. Therefore, no impacts to vegetation would occur.				
Water	0	0	0	No Impact
<i>Explanation:</i> No water is visible on site or in the surrounding area. Project development would not introduce water to or remove water from the visible landscape.				
<i>Detail:</i> Water features are not included in pre- or post-development views. No impacts to water features would occur.				
Color	2	1	1	Less than Significant
<i>Explanation:</i> Foreground and middle-ground vegetation and terrain display shades of yellow, green, and brown. The hills in the middle ground are tan while the mountains in the background are hazy dark grey/blue. Dark grey/blue and metallic grey colors displayed by solar modules and steel support poles would be introduced to the southern site, but occupy portions of the middle ground and are only faintly visible from this viewpoint.				
<i>Detail:</i> The foreground and middle ground are dominated by shades of yellow, green, and brown. Solar modules and support poles, which are faintly visible within the middle ground on the southern site would display dark grey/blue and metallic grey colors that would contrast with the characteristic drab color of desert terrain and vegetation. As such, color contrast would be weak due to project site distance from KOP 4.				

TABLE 4.1-7: VISUAL QUALITY RATING ANALYSIS – KOP 4

Sensitive Receptor: Motorists traveling westbound on SR-58. Pre-development and post-development conditions are depicted in Figure 4.1-4.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Adjacent Scenery	2	2	0	No Impact
<i>Explanation:</i> Views are moderately enhanced by conical hills and low dark mountains in the background. Hills and mountains would remain visible. Solar arrays, fencing, gen-tie components, and other project components, which are faintly visible from this viewpoint, would not block hills or mountains from view.				
<i>Detail:</i> Visibility of hills and mountains would not be altered by project development. No impacts would occur.				
Scarcity	2	1	1	Less than Significant
<i>Explanation:</i> There are no particularly unique or unusual aspects in the view. Conical hills add interest to the scene but are visible throughout the local area. Views would be slightly modified by industrial development in the middle ground.				
<i>Detail:</i> Views of conical hills are available in other locations and are not unique to KOP 4, and project development would not substantially affect the availability of long views to hilly terrain in the local area. Therefore, impacts to view scarcity would be less than significant.				
Cultural Modifications	-1	-2	1	Less than Significant
<i>Explanation:</i> Cultural modifications include rural residential homes, industrial uses, freeway signs as well as paved and dirt roads. Solar arrays and associated structures would be introduced to the middle ground, but would be faintly visible from KOP 4.				
<i>Detail:</i> Cultural modifications include rural residential buildings, industrial uses, freeway signs and paved and dirt roads. The project would introduce solar development and ancillary components to the middle ground. Solar arrays, the gen-tie line and structures and other project components would attract attention and create form, line, and color contrast. However, these project components are faintly visible from this viewpoint. Visual impacts associated with cultural modifications would be less than significant.				
Totals:	11	7	4	Potentially Significant



Existing View

ZCC 56, Map 196; ZCC 2, Map 212;
ZCC 59, Map 213; CUP 45, Map 196;
CUP 5, Map 212; CUP 66, Map 213;
SPA 30, Map 196



Proposed View



FIGURE 4.1-6: KOP 5 - EXISTING AND SIMULATED VIEWS FROM REED AVENUE AND 5TH STREET INTERSECTION LOOKING NORTHEAST TOWARDS THE SOUTHERN SITE

TABLE 4.1-8: VISUAL QUALITY RATING ANALYSIS – KOP 5

Sensitive Receptor: Residents located near the southern site. Pre-development and post-development conditions are depicted in Figure 4.1-5.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	3	3	0	No Impact
<i>Explanation:</i> Flat terrain in the foreground with several conical hills in the middle ground and the dark, low silhouette of mountains are detectable to the northeast in the background. The flat topography of the area would not be noticeably modified by project development except with installation of the gen-tie support structures.				
<i>Detail:</i> Flat landforms and hills occupy the foreground and middle-ground landscape. The hills display a unique conical form that adds interest to the low and flat landscape. Project elements, would only slightly obscure hills within the middle ground and mountains within the background. As such, the project would not substantially alter or modify existing landforms in the view.				
Vegetation	3	3	0	Less than Significant
<i>Explanation:</i> Low and mounded desert shrubs cover the foreground terrain. Joshua trees dot the middle ground. The development of solar modules and other components would replace existing desert shrubs visible within the southern site. However, the effects of vegetation removal would be obscured by distance.				
<i>Detail:</i> Both the pre- and post-development views depict low, mounded desert shrub vegetation and Joshua trees within the foreground and middle ground. Removal of vegetation in the middle ground due to project development would not be noticeable due to distance. Contrast associated with vegetation removal would not be prominent, and as viewed from KOP 5, low and mounded desert shrub vegetation would continue to cover the valley. No impacts to vegetation would occur.				
Water	0	0	0	No Impact
<i>Explanation:</i> No water is visible on site or in the surrounding area. Project development would not introduce water to or remove water from the visible landscape.				
<i>Detail:</i> Water features are not included in pre- or post-development views. No impacts to water features would occur.				

TABLE 4.1-8: VISUAL QUALITY RATING ANALYSIS – KOP 5

Sensitive Receptor: Residents located near the southern site. Pre-development and post-development conditions are depicted in Figure 4.1-5.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Color	2	1	1	Less than Significant
<i>Explanation:</i> Foreground and middle-ground vegetation and terrain display shades of yellow, green, and brown. Hills in the middle ground are tan and brown with dark mountains detectable in the northeast in the background. Linear disturbance associated with local roads development adds light tan tones to the view. <i>Detail:</i> Muted earth tones of brown, green and yellow dominate the foreground and middle ground. Visible solar arrays would introduce a simple horizontal band of black color to the middle ground that would be easy to overlook. The lightly colored, vertical lines of gen-tie structures would be faint, but visibility would be enhanced on a clear day with a blue sky backdrop. Background colors would not be altered or substantially obstructed from view. Impacts associated with color would be less than significant.				
Adjacent Scenery	2	1	1	Less than Significant
<i>Explanation:</i> Views are moderately enhanced by conical hills and low dark mountains in the background. <i>Detail:</i> The project would not modify, substantially obstruct, or interrupt views of adjacent scenery. Less-than-significant impacts to views of adjacent scenery would result.				
Scarcity	2	1	1	Less than Significant
<i>Explanation:</i> The available view is broad but somewhat limited by middle ground hills. There are no unique aspects from this view. Similar views exist throughout the region. <i>Detail:</i> The view from this intersection are typical of views available throughout the area and landforms and vegetation are not particularly unique or unusual. Landscape modification resulting from project development, which are only faintly visible, would result in less than significant impacts to view scarcity.				

TABLE 4.1-8: VISUAL QUALITY RATING ANALYSIS – KOP 5

Sensitive Receptor: Residents located near the southern site. Pre-development and post-development conditions are depicted in Figure 4.1-5.				
Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Cultural Modifications	0	-1	1	Less than Significant
<i>Explanation:</i> With the exception of access roads, the landscape contains limited cultural modifications.				
<i>Detail:</i> The landscape is generally free of cultural modifications, and those in the foreground (i.e., access roads) are not visually prominent. The flat to hilly to mountainous terrain and low and mounded desert vegetation are prominent, and the view is relatively and unencumbered by discordant elements. The project would introduce dark and highly visible solar modules to the middle ground, but due to the low form and dark color of solar arrays and the faint lines associated with the gen-tie, the addition of cultural modifications to the middle ground of KOP 5 would result in less-than-significant impacts.				
Totals:	12	8	4	Potentially Significant

Factors Reducing Visual Impacts

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

- The northern and southern sites are generally flat and would reduce the need for grading and visible alteration of landforms.
- The lack of scenic designation of local roads in the immediate project area reduces viewer sensitivity and expectations for scenic landscapes.
- Solar panels, the primary feature of the project, would cover most of the land on the site and would generally be 12 feet in height or less. Therefore, solar panels would not block long-distance views and would be diminished when viewed from 0.5 miles or farther.
- Solar panels do not create significant levels of glare, as explained in Impact 4.1-3, below.
- Minimal onsite lighting would be required during operations, as explained in Impact 4.1-4, below. Facilities would not operate at night, and no regular nighttime staffing would be required.

Summary

As shown in Tables 4.1-4 through 4.1-8, implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. As shown in the visual simulations, the visual change associated with project development would be somewhat

mented when viewed from a distance of greater than 1 mile. With distance, the effects associated with removal of vegetation from the northern and southern sites would be masked by dense groupings of solar arrays. Similarly, thousands of solar arrays viewed from distance would begin to appear similar to other dark tones associated with distant terrain in the landscape. However, visual change would be evident from SR-58. Even with distance and diminished visibility, the visual change associated with the introduction of approximately over 2,000 acres of solar development on currently undeveloped desert terrain would likely attract attention. Further, the introduction of thousands of solar panels, a collector substation, the O&M facility, the energy storage facility, and the gen-tie line supported by up to 185-foot-high transmission poles would increase the footprint of solar and electrical transmission development in the Mojave area. More importantly, development of the project would expand existing industrial development (i.e., solar and wind developments) present west of SR-14. Because solar and other renewable energy developments are generally concentrated to the west of SR-14, the project would introduce manufactured elements where they do not currently dominate the landscape, resulting in significant aesthetic impacts.

Mitigation Measures MM 4.1-1 through MM 4.1-4 would be incorporated to reduce visual impacts that would occur from the collection of debris along the site boundary and would limit vegetation removal and would plant native vegetation. Native vegetation would be left in place around the proposed project area where feasible, allowing for a natural screening of project components. Furthermore, the color treatment of buildings would help these components to better blend in with the natural landscape. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped desert landscape character of the project site, impacts to visual resources would remain significant and unavoidable.

Mitigation Measures

MM 4.1-1: Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program shall be submitted for review and approval to the Kern County Planning and Natural Resources Department. The program shall include, but not be limited to the following:

- a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities.
- b. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.
- c. The project proponent/operator shall implement a regular trash removal and recycling program on an ongoing basis during construction and operation of the project. Barriers to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.
- d. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.

- MM 4.1-2:** The project proponent shall install metal fence slats or similar view-screening materials, as approved by the Kern County Planning and Natural Resources Department, in all on-site perimeter fencing for any portion of the solar site that is adjacent to parcels zoned for residential use, including E (Estate Residential), R-1 (Low-Density Residential), R-2 (Medium-Density Residential), R-3 (High-Density Residential), or PL (Platted Lands) zoning unless the adjacent property is owned by the project proponent (to be verified by the Kern County Planning and Natural Resources Department) or a public or private agency that has submitted correspondence to the Kern County Planning and Natural Resources Department requesting this requirement to be waived. Should the project proponent sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale.
- MM 4.1-3:** Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan, for review and approval by the Kern County Planning and Natural Resources Department, that will ensure all project facilities including operations and maintenance buildings, gen-tie poles, array facilities, etc. blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.
- MM 4.1-4:** Wherever possible, within the proposed project boundary, the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place as permitted by Fire Code. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department for review and approval. The plan shall include the measures detailed below.
- a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) and/or allowed to re-vegetate with the existing native seed bank in the top soil where possible to establish revegetation. Areas that contain permanent features such as perimeter roads, maintenance roads or under arrays do not require revegetation.
 - b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, (4) a list of the consultation efforts completed, (5) the methods and schedule for installation of fencing that complies with wildlife agency regulations, and a clear prohibition of the use of toxic rodenticides.
 - c. Ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish re-vegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural Resources Department prior to planting. Phased seeding may be used if a phased construction approach is used (i.e., the entire site need not be seeded all at the same time).
 - d. Vegetation/ground cover shall be continuously maintained on the site by the project operator.

- e. The re-vegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during these three-year periods, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for the three-year period. Should efforts to revegetate with the existing native seed bank in the top soil prove in the second year to not be successful by 75 percent cover rate, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department and an additional year shall be added to the monitoring program to ensure coverage is achieved. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible.

Level of Significance after Mitigation

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

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

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

Construction

Lighting

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

Glare

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

Operation

Lighting

As described in Chapter 3, *Project Description*, the project's lighting system would provide O&M personnel with illumination for both normal and emergency conditions. Lighting would be installed at access gates, near the O&M building (collocated with the substation on the northern site), and adjacent to the substation. Lighting would be installed along the gen-tie line as required by FAA and no lighting is anticipated along the majority of the fence lines around the perimeter of the solar sites. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Additionally, lighting would be directed downward and shielded to focus illumination on the desired areas only and to minimize light trespass in accordance with applicable County requirements. Potential operational impacts associated with new sources of lighting at the solar sites would be minimized through compliance with applicable development standards pertaining to lighting, including Chapter 19.81 (Dark Skies Ordinance), as required with implementation of Mitigation Measure MM 4.1-5, which states that projects would be designed to provide the minimum illumination needed to achieve safety and security objectives. Therefore, implementation of Mitigation Measure MM 4.1-5 and compliance with applicable local development standards and regulations pertinent to lighting would minimize the potential for light trespass onto adjacent properties and roads, and impacts would be less than significant.

Glare

Potential new sources of glare would be produced by sunlight reflecting off the glass surfaces of the solar modules, that would be installed under the project.

An analysis of glare was conducted for the project and is provided in Appendix B of this EIR. As discussed therein, glare can result in visual hazards and temporary loss of vision. The hazard level of glare depends on the ocular impacts to the observer. An impact can be green (low potential to cause an after-image); yellow (potential to cause a temporary after-image); and red (potential to cause retinal burn and permanent eye damage). The analysis was based on project characteristics (i.e., single-axis tracking, smoothing glass with anti-reflective coating, north-south orientation, 60-degree maximum and resting angle) and the receptors observed in the vicinity of the project site (e.g., airport flight paths, air traffic control towers, dwelling/hotels, roads/highways, scenic trails, and railroads). As discussed in Appendix B of this EIR, the analysis determined that the project would not result in any hazardous glare in the green, yellow, or red ocular impact categories. The project would also implement Mitigation Measure MM 4.1-6, which requires the project proponent to demonstrate the solar panels and hardware are designed to minimize glare. Based

on this analysis, operation of the solar sites would result in less-than-significant impacts related to substantial adverse effects to daytime views due to new sources of glare.

The O&M building, energy storage facility, and optional collector substation could also generate glare that could be received by motorists during project operations. As described in Chapter 3, *Project Description*, the O&M building would be a pre-fabricated structure and is unlikely to incorporate particularly reflective exteriors and surfaces. The energy storage facility would also incorporate non-reflective materials and would not generate glare during daytime hours. To further reduce glare potential, the project would be required to implement Mitigation Measure MM 4.1-7 which requires the use of non-reflective materials when feasible. The optional collector substation would include vertical steel components of low potential reflectivity.

Therefore, based on the analysis presented above and with implementation of Mitigation Measures MM 4.1-6 and MM 4.1-7, potential glare effects generate by the solar panels, O&M building, energy storage facility, and optional collector substation would be less than significant.

Mitigation Measures

- MM 4.1-5:** Prior to final activation of the solar facility, the project proponent shall demonstrate to Kern County Planning and Natural Resources Staff that the project site complies with the applicable provisions of the *Dark Skies Ordinance* (Chapter 19.81 of the Kern County Zoning Ordinance), and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.
- MM 4.1-6:** Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department.
- MM 4.1-7:** Prior to final activation of the solar facility, the project operator shall demonstrate that all onsite buildings utilized non-reflective materials, as approved by the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, impacts would be less than significant.

Cumulative Setting Impacts and Mitigation Measures

Of the cumulative projects presented in Chapter 3, *Project Description*, of this Draft EIR, there are 73 solar and non-solar projects proposed throughout the Antelope Valley in Kern County and 27 solar and non-solar projects proposed in Los Angeles County. These have the potential to result in cumulative impacts to

aesthetics when considered together with the project. The “scarcity” rating criterion is likely to be impacted by widespread development in the area, as unobstructed views of regional topographical features and undeveloped lands would be less available as acreage is developed with PV panels, wind energy projects, and new transmission lines are constructed.

As discussed above, the project would have less than significant impacts as it relates to scenic vistas as project distance, topography, and intervening development would reduce the visual prominence of the proposed solar development. Due to the developed nature of the landscape visible from the PCT (i.e., existing solar facilities, wind energy facilities and transmission line infrastructure) in the general project area, project development would not have a substantial adverse effect on existing views from the PCT. As such, cumulative impacts would be less than significant and not cumulatively considerable.

With regard to impacts related to damaging scenic resources within a scenic highway, the project would not be visible from any Officially Designated State or County Scenic Highway as there are no Officially Designated State or County Scenic Highways in the vicinity of the project site. SR-58 and SR-14, which are in proximity to the project site, are eligible state scenic highways. The project would not be visible from SR-14 or SR-58. As such, cumulative impacts would be less than significant and not cumulatively considerable.

As the discussion provided above indicates, the project would result in significant and unavoidable impacts related to visual character despite implementation of mitigation. As shown in Figure 3-5, *Surrounding Solar Projects*, provided in Chapter 3, *Project Description*, the Edward AFB Solar Project is located immediately south of the southern site, and several other solar projects, including RE Columbia Solar Project, RE Columbia Two Solar Project, and the Windhub Solar Project are immediately adjacent to the gen-tie study area. Other nearby solar projects include RE Clearwater Solar Project and RE Yakima Solar Project, SEPV Solar Project, Columbia Solar Three, and Rio Grande Project. While other projects in the region would also be required to implement various mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. Even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-4, the project’s contribution to significant impacts associated with visual character in the Antelope Valley would be significant and unavoidable.

The project would result in less than significant impacts to related to light and glare with the implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7. Similarly, cumulative project in the region would also be required to implement various mitigation measures to reduce lighting impacts. However, given the number of proposed cumulative projects directly adjacent to and within proximity of the project and the conversion of thousands of acres of land in a presently rural area, even with implementation of mitigation, the project and cumulative projects combined would result in significant and unavoidable cumulative impacts related to light and glare.

Mitigation Measures

Implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7.

Level of Significance after Mitigation

Despite implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7, cumulative impacts related to visual character and light and glare would be significant and unavoidable. Cumulative impacts related to scenic vistas and scenic resources would be less than significant.

Section 4.2

Agricultural Resources

4.2.1 Introduction

This section of the EIR describes the affected environment and regulatory settings for agriculture and forest resources for the project. It also describes the impacts on agricultural and forest resources that would result from the implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. This section is based, in part, on information provided in the Kern County Agricultural Crop Report (2018) and prepared by the Kern County Department of Agriculture and Measurement Standards.

4.2.2 Environmental Setting

Regional Setting

Kern County covers approximately 8,163 square miles (5,224,258 acres) including 1,384 square miles (885,957 acres) of harvested agricultural land and approximately 2,889 square miles (1,849,266 acres) of grazing land. According to the 2018 Kern County Agricultural Crop Report, agriculture in Kern County was worth approximately \$7.4 billion in 2018, which is an increase of 3 percent from the 2017 crop value. The top five commodities for 2018 were grapes, almonds, pistachios, citrus, and milk, which made up more than \$4.4 billion (59 percent) of the total value, with the top twenty commodities making up more than 71 percent of the total value (Kern County, 2018).

Kern County is a growing population and like many agricultural based jurisdictions, must balance urbanization and the loss of farmland. As shown in **Table 4.2-1, *Agricultural Land Use Designation Conversion in 2018***, during 2018, approved amendments re-designated 132.18 acres of agriculturally designated lands for non-agricultural uses. These amendments resulted in a total net conversion of 132.18 acres within unincorporated Kern County (Kern County, 2018). Farmland designations are defined in Section 4.2.3, *Regulatory Setting*, below.

TABLE 4.2-1: AGRICULTURAL LAND USE CONVERSIONS IN 2018

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

SOURCE: Kern County, 2018.

According to Kern Economic Development Corporation (KEDC), it is estimated that the total population of Kern County will reach approximately 1,240,496 individuals in 2040 (KEDC, 2019), growing from today's population of approximately 905,801 (DOF, 2018). The anticipated growth in population will most likely decrease the amount of agricultural land in Kern County even further. However, it is important to note, the conversion of agricultural land is affected by numerous factors other than population growth and urban development. Actual production is dependent on commodity prices, water prices and supply, labor, the proximity of processing and distribution facilities, and pest management. Factors such as weather, trade agreements, and labor disputes can also affect decisions regarding what crops are grown and which lands go in and out of production. Most conversion of Prime or Farmland of Statewide Importance agricultural lands is occurring within the planned development footprint of Metropolitan Bakersfield. Very little conversion of the most productive agricultural lands has occurred in outlying areas of the County.

Local Setting

The project site is located in the southeastern portion of Kern County within the administrative boundaries of the Kern County General Plan, Mojave Specific Plan, and West Edwards Road Settlement Specific Plan. The project site is primarily designated for resources management and zoned agricultural as shown on listed in Chapter 3, *Project Description*, Table 3-1, *Northern Project Assessor Parcel Numbers, Corresponding Specific Plan Map Codes, Zoning, and Acreage*, and Table 3-2, *Southern Project Assessor Parcel Numbers, Corresponding Specific Plan Map Codes, Zoning, and Acreage*.

While a portion of the project site is located within the boundaries of Agricultural Preserve No. 24, the project site is currently undeveloped open space and does not support agricultural uses. As discussed in Section 4.5, *Cultural Resources*, the project site and surrounding area have been historically only sparsely developed with transportation routes or railroad lines. There has been no farming on any of the parcels within the project site over the last 10 years. The land in the area was cultivated until around 1970, primarily with alfalfa, but no farming has occurred on the parcels since that time.

The project site is not under a Williamson Act Land Use contract (DOC, 2013). As shown in **Figure 4.2-1, Farmland Mapping and Monitoring Program Designations**, the project site is not designated by the California Department of Conservation (DOC) as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland; the DOC designates the project site as Nonagricultural and Natural Vegetation, Grazing Land, and Vacant or Disturbed Land (DOC, 2018).

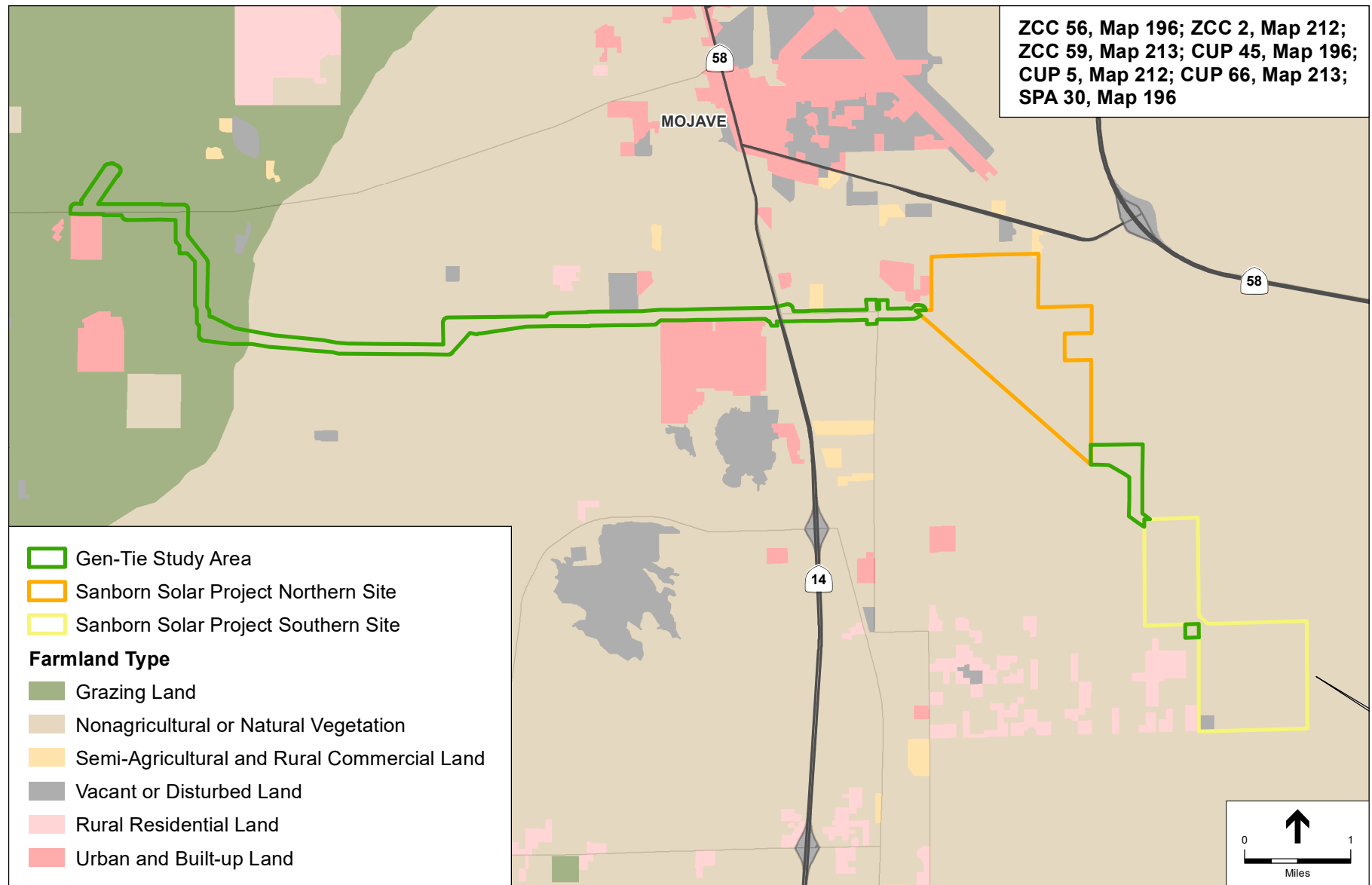


FIGURE 4.2-1: FARMLAND MAPPING AND MONITORING PROGRAM DESIGNATIONS

4.2.3 Regulatory Setting

Federal

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

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

In 1981, Congress passed the Agriculture and Food Act (Public Law 97-98) which contained the FPPA, Subtitle I of Title XV, Sections 1539–1549. The final rules and regulations were published in the Federal Register on June 17, 1994. Federal agencies are required to develop and review their policies and procedures related to implementing the FPPA every 2 years.

The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or rely on assistance from a federal agency (NRCS, 2019).

State

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

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

The list below describes the categories mapped by the DOC (DOC, 2016b) through the Farmland Mapping and Monitoring Program. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to as “farmland.”

- **Prime Farmland.** Farmland that has the ideal combination of physical and chemical features. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields and long-term agricultural production. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland that is similar to Prime Farmland but with minor shortcomings, such as greater slopes or lower moisture content. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

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

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act (California Government Code Sections 51200–51297.4), is applicable to specific parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under a Williamson Act contract. The Williamson Act program is administered by the DOC, in conjunction with local governments that administer the individual contract arrangements with landowners. Participation in the Williamson Act program is dependent on County adoption and implementation of the program and is voluntary for landowners (DOC, 2019).

Under the Williamson Act, a landowner commits the parcel to a 10-year period, during which time no conversion out of agricultural use is permitted. In return, the land is taxed at a rate based on the actual use (i.e., agricultural production), as opposed to its unrestricted market value. Each year the contract automatically renews unless a notice of nonrenewal or cancellation is filed. However, the application to cancel must be consistent with the criteria of the affected county or city. Nonrenewal or contract cancellation does not change a property's zoning. Participation in the Williamson Act program, which is voluntary for landowners, is dependent on a county's willingness to adopt and implement the program. The Williamson Act states that a board or council will, by resolution, adopt rules governing the administration of agricultural preserves. The rules of each agricultural preserve specify the allowed uses. Generally, any commercial agricultural use would be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted under a permit (DOC, 2019).

California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Also

Section 51238 states that board of supervisors may impose conditions on lands or land uses to be placed within preserves to permit and encourage compatible uses, in conformity with Section 51238.1. Furthermore, under California Government Code Section 51238.1, a board or council may allow any use that without conditions or mitigations would otherwise be considered incompatible. However, this may occur only if that use meets the following conditions:

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

Farmland Security Zone Act

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

Public Resources Code Section 21060.1

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

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to agricultural resources. The policies, goals, and implementation measures in the Kern County General Plan related to agricultural resources that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

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

- **8.1 Intensive Agriculture (minimum parcel size 20 acres gross)** – Lands devoted to the production of irrigated crops or having potential for such use. Uses shall include, but are not limited to, the following: Irrigated cropland; orchards; vineyards; horse ranches; raising of nursery stock ornamental flowers and Christmas trees; fish farms' bee keeping' ranch and farm facilities and related uses; one single-family dwelling unit; cattle feed yards; dairies; dry land farming; livestock grazing; water storage; groundwater recharge acres; mineral; aggregate; and petroleum exploration and extraction; hunting clubs; wildlife preserves; farm labor housing; public utility uses; and agricultural industries pursuant to provisions of the Kern County Zoning Ordinance, and land within development areas subject to significant physical constraints.
- **8.2 Resource Reserve (minimum parcel size is 20 acres gross, except to a Williamson Act Contract/Farmland Security Zone Contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands devoted to areas of mixed natural resource characteristics including rangeland, woodland, and wildlife habitat which occur in an established County water district.
- **8.3 Extensive Agriculture (minimum parcel size 20 acres gross, except lands subject to a Williamson Act contract/Farmland Security Zone contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands devoted to uses involving large amounts of land with relatively low value-per-acre yields such as livestock grazing, dry-land farming, and woodlands.

The entire project site is designated 8.5 Resource Management.

- **8.5 Resource Management (minimum parcel size 20 acres gross, except lands subject to a Williamson Act contract/Farmland Security Zone contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands consisting primarily of open space containing important resource values, such as wildlife habitat, scenic values, or watershed recharge areas. These areas may be characterized by physical constraints, or may constitute an important watershed recharge area or wildlife habitat or may have value as a buffer between resource areas and urban areas. Other lands with this resource attribute are undeveloped, non-urban areas that do not warrant additional planning within the foreseeable future because of current population (or anticipated increase), marginal physical development, or no subdivision activity. Additionally, the designation of 8.5 (Resource Management) can be used for agricultural uses such as dry-land farming and ranch facilities.

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

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

1.9. Resource

Goals

- Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.
- Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential for future use.
- Goal 3: Ensure the development of resource areas minimize effects on neighboring resource lands.
- Goal 5: Conserve prime agriculture lands from premature conversion.
- Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

Policies

- Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of general plan designation.
- Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.
- Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.

Implementation Measure

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

Mojave and West Edwards Road Settlement Specific Plans

The project is within the boundaries of the Mojave Specific Plan and West Edwards Road Settlement Specific Plan. The Mojave Specific Plan was adopted in October 2003 and the West Edwards Road Settlement Specific Plan was adopted on February 24, 1992, and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Mojave and West Edwards Road Settlement Specific Plans area. The Mojave Specific Plan places the project site within Map Code 8.5 (Resource Management [Minimum 20 acres]) and 8.5/2.4 (Resource Management [Minimum 20 acres/Steep Slope]). A portion of the project site, within the West Edwards Road Settlement Specific Plan Map, is designated as Map Code 8.5 (Resource Management [Minimum 20 acres]). There are no specific agriculture-

related policies and measures contained in the Mojave and West Edwards Road Settlement Specific Plans that are applicable to the project. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detail and refined manner unique to a smaller area of the County. Since there are no applicable goals, policies, or implementation measures within the Mojave Specific Plan and West Edwards Road Settlement Specific Plan, refer to the applicable policies, goals, and implementation measures of the Kern County General Plan above.

Kern County Zoning Ordinance

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

As described in Section 4.2.2, *Local Setting*, the Kern County Zoning Ordinance designates the project site as zoned A (Exclusive Agriculture), A-1 (Limited Agriculture), and A-1 H (Limited Agriculture – Airport Approach Height Combining). According to the Kern County Zoning Ordinance, a commercial solar facility is a compatible use in the A district. The construction and operation of a solar energy generating facility on the site would require the approval of a Conditional Use Permit.

Williamson Act Standard Uniform Rules

Kern County has adopted a set of rules that identify compatible land uses within agricultural preserves established under the Williamson Act. The rules restrict uses on such land to agricultural or other compatible uses. Agricultural uses include crop cultivation, grazing commercial wind farms, livestock breeding, dairies, and uses that are incidental to these uses. Other compatible agricultural uses include those associated with public utilities (e.g., gas, electric, communications, water, and other similar public utilities). For purposes of this analysis, the conversion of agricultural land to a solar facility itself would be incompatible with the farming provisions necessary for projects under Williamson Act contracts. Therefore, a proposed solar project on contracted land would be required by Kern County to petition for an early cancellation of the contract. However, the project site does not contain lands under an active Williamson Act contract and, therefore, is not subject to these rules.

4.2.4 Impacts and Mitigation Measures

Methodology

The project's potential impacts on agriculture and forest resources have been evaluated on a qualitative basis through review of the Kern County Agricultural Crop Report (2018), the 2016 DOC Important Farmland Map, and the *Kern County General Plans and Housing Element Annual Progress Report* (January 1, 2018, to December 31, 2018). A change in land use would normally be determined to be significant if the effects described in the thresholds of significance were to occur (see CCR Title 14, Section 15064.7(a)). The evaluation of project impacts is based on a thorough analysis of the Kern County

General Plan's applicable goals and policies related to agricultural resources, professional judgment, and the significance criteria established by CEQA.

Thresholds of Significance

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

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

Project Impacts

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

The project would not directly or indirectly impact farmland. As mentioned above, the entire project site is vacant, undeveloped, open space and is not being used for agricultural purposes. There has been no farming on any of the parcels within the project site over the last 10 years. The land in the area was cultivated until around 1970, primarily with alfalfa, but no farming has occurred on the parcels since that time. The project site is not under a Williamson Act Land Use contract (DOC, 2013). The project site is not designated by the California Department of Conservation (DOC) as prime Farmland, Farmland of Statewide Importance, or Unique Farmland. As shown in Figure 4.2-1, the DOC designates the project site as Nonagricultural and Natural Vegetation, Grazing Land, and Vacant or Disturbed Land (DOC, 2018). Surrounding properties are designated as Nonagricultural and Natural Vegetation, Vacant or Disturbed Land, Semi-Agricultural and Rural Commercial Land, Grazing Land, and Urban and Built-up Land (DOC, 2018). Construction and/or operation of the project would not convert prime, unique, or important farmland to nonagricultural uses and, therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

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

The project site is not under a Williamson Act Land Use contract (DOC, 2013). There has been no farming on any of the parcels within the project site over the last 10 years. The land in the area was cultivated until around 1970, primarily with alfalfa, but no farming has occurred on the parcels since that time. In addition, the project is located within the Antelope Valley – East Kern Water Agency’s (AVEK) service area and the potential for future farming activities is limited due to the basin groundwater adjudication status.

The project area is located on mostly undeveloped land in an area that does not currently have any water-demanding activities. According to AVEK’s *2017 Annual Water Resources Report*, the Judgment and Physical Solution process for the Antelope Valley Groundwater Adjudication reached a milestone in December of 2015 with a settlement between local groundwater producers including public water suppliers, landowners, small pumpers, and non-pumping parties. As the Judgment identified the region in a state of overdraft, the pumping rights among these producers is to be managed to reduce groundwater level declines and subsidence. The Watermaster Board, an Advisory Committee, the Watermaster Engineer, and an Attorney was established with the Judgment. The Physical Solution portion of the Judgment provides direction for this reduction of groundwater use within the adjudicated area.

The year 2017 was the second of 7 years that required a reduction of groundwater production. This is known as the Rampdown Period. The amount that each Party may produce from the Antelope Valley region’s adjudicated basin Native Safe Yield will be reduced linearly (20 percent per year), as necessary, in equal annual increments to a final allowed Production Right. Given the fact that the site has not been agriculturally farmed in the last 10 years, and is unlikely to be farmed in the future due to water availability, implementation of this project is not expected to conflict with existing agricultural use.

The project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), Limited Agriculture – Floodplain Secondary (A-1 FPS), and Limited Agriculture – Airport Approach Height Combining (A-1 H). Pursuant to Sections 19.12.020 and 19.12.030 of Kern County Zoning Ordinance, construction and operation of solar facilities on areas zoned for Exclusive Agriculture (A) require approval of a Conditional Use Permit (CUP). The Kern County General Plan encourages the development of alternative sources of energy, such as solar energy, while protecting the environment (see Section 4.10, *Land Use and Planning*, of this EIR, for additional goals and policies that promote solar energy development). Solar facilities are considered to be a compatible use and are permitted on properties zoned for exclusive agricultural use with the approval of a CUP.

APN 429-030-02, which is approximately 320 acres of the project site, is within the Kern County Agricultural Preserve Number 24 boundary. Private land within locally designated agricultural preserve areas are eligible for enrollment under a Williamson Act contract. Participation in the Williamson Act program, which is voluntary for landowners, is dependent on a County’s willingness to adopt and

implement the program. The rules of each agricultural preserve specify the allowed uses. Local governments may identify compatible uses that can be permitted under a use permit (DOC, 2015); which the County does by way of its Exclusive Agriculture zone. Additionally, California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Therefore, the proposed project would be compatible with the Kern County Agriculture Preserve Number 24. Further, there are no parcels within the project site that are under any Williamson Act contracts or being used for agriculture.

Upon approval of the listed CUPs, the proposed project would not conflict with agricultural zoning of the project site. Therefore, development of the project site for use as a solar energy facility is expected to result in a less-than-significant impact related to conflicts with existing zoning. The project site is not under a Williamson Act contract and, therefore, there would be no impact resulting from a conflict with a contract.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

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

The project site is not located on land zoned as forest land or timberland. It is located on private land zoned Exclusive Agriculture (A), Limited Agriculture (A-1), A-1 FPS (Limited Agriculture – Floodplain Secondary), and Limited Agriculture – Airport Approach Height Combining (A-1 H). While the portion of the project zoned A-1 and A-1 FPS is not consistent with the with the Kern County General Plan land use designation of 8.5, the proposed zone change from A-1 to A and from A-1 FPS to A FPS would ensure consistency with the Kern County General Plan. According to the Kern County Zoning Ordinance, a commercial solar energy generating facility is a compatible use in the Exclusive Agriculture zone district. The construction and operation of a solar energy generating and storage facility on the project site would require the approval of Conditional Use Permits (Kern County Zoning Ordinance 19.12.030.G). The proposed discretionary actions are consistent with the Kern County Zoning Ordinance regulations for solar uses. Given that the project site is not zoned for forest land, timberland, or timberland production, it is not anticipated to conflict with existing zoning and impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

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

The project is not situated on forest land and would not convert forest land to non-forest uses. There is no land in the vicinity of the project that is zoned as forest land, timberland, or lands zoned for timberland production. Therefore, there are no anticipated impacts related to the rezoning of forest land or conversion of forest land to a non-forest use and therefore impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

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

Currently, there are no existing agricultural uses or forest lands on the project site or within the vicinity. The project site consists of largely undeveloped desert land, with scattered residential uses in the project vicinity. The land in the project area was cultivated until around 1970, primarily with alfalfa, but no farming has occurred on the parcels since that time and is unlikely to be farmed in the future due to water availability. Therefore, the conversion of the undeveloped project site to a solar facility would not result in the conversion of farmland to a nonagricultural use nor the conversion of forest land to non-forest use. Operation of the solar facility on the project site would not preclude the conversion of surrounding areas to agricultural uses. Further, the project site could be used for agricultural uses following project decommissioning. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.2-6: The project would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 acres or more (Section 15206(b)(3) Public Resources Code.

The project site is not subject to an open space contract made pursuant to the California Land Conservation Act of 1965 or the Farmland Security Zone Contract. As stated above, the project site is not under a Williamson Act Contract, and therefore impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for cumulative agricultural and forest impacts is considered the Antelope Valley. This geographic scope was selected because the land within the region possesses relatively similar agricultural opportunities, soil conditions, climate, and water availability. As shown in Table 3-5, *Cumulative Projects List*, of Chapter 3, *Project Description*, there are approximately 73 projects proposed or approved throughout the Antelope Valley in Kern County and in the desert portion of Kern County outside the Antelope Valley and an additional 27 projects proposed throughout Lancaster, Palmdale, and Unincorporated Los Angeles County. Of the approximately 73 total projects in Kern County, 43 would be located within 6 miles of the project site and 35 would be located within 1 mile of the project site.

Of the approximately 73 total projects in Kern County, 9 would be located in grazing land, one would be Farmland of Statewide Importance, and one would be located on Prime farmland and would thus contribute to a cumulative loss of farmland (DOC, 2016b).

Although the project would develop a solar facility on land zoned for agricultural uses, the proposed project would not result in the loss of farmland as the project site has not be used for agricultural purposes for more than 10 years and is and is unlikely to be farmed in the future due to water availability. Further, the development of solar power generating facilities on the project site is not anticipated to affect the potential for agricultural production to occur in adjacent or distant areas within the Antelope Valley. Therefore, the proposed project's contribution to cumulative impacts related to agriculture in Kern County would be less than cumulatively considerable.

Mitigation Measures

No mitigation would be required.

Level of Significance

Cumulative impacts would be less than significant.

4.3.1 Introduction

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

Information in this section is based primarily on the *Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Sanborn Solar Project, Kern County, California* (Air Quality and GHG Technical Report) (Dudek, 2019), which was prepared by Dudek, located in Appendix C1 of this EIR and incorporated by reference herein. The report was prepared in accordance with the Eastern Kern Air Pollution Control District's (EKAPCD) Guidelines for Implementation of the California Environmental Quality Act (CEQA) (EKAPCD, 1999) and Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*. In addition, information in this section is also based in part on the *Ambient Air Quality Analysis and Health Risk Assessment Sanborn Solar Facility Project, Kern County, California* (AAQA) (Dudek, 2018), which was prepared by Dudek, located in Appendix C2 of this EIR and incorporated by reference herein.

4.3.2 Environmental Setting

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic drainage features. The project site is located in the northwestern portion of the Mojave Desert Air Basin (MDAB) and is under the jurisdiction of EKAPCD. The MDAB includes the eastern half of Kern County, the northern part of Los Angeles County, most of San Bernardino County (except for the southwest corner), and the eastern edge of Riverside County. It is separated from the South Coast Air Basin, to its south, by the San Gabriel and San Bernardino Mountains. It is separated from the San Joaquin Valley, to the northwest, by the Tehachapi Mountains and the south end of the Sierra Nevada.

Topography and Meteorology

Air pollution, especially the dispersion of air pollutants, is directly related to a region's topographic features. Air quality is a function of both the rate and location of pollutant emissions and the meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects ambient air quality.

The project site is located at the western edge of the Antelope Valley, directly south of the community of Mojave, in southeastern Kern County. In particular, the project site consists of two discontinuous sites within the same vicinity and is located approximately 1.5 miles southwest of the unincorporated community of Mojave, 7.5 miles northeast of the community of Rosamond, and 14 miles southeast of the City of

Tehachapi. The project site is located approximately 0.5 miles south of State Route 58 (SR-58) and 1.25 miles east of State Route 14 (SR-14) (Antelope Valley Freeway). The project site is bounded by SR-58 and the Mojave Air and Space Port to the North, open space to the east and west, and Edwards Air Force Based (EAFB) to the south, adjacent to the southernmost portion of the project site. Desert vegetation dominates the project site and region. The project is located on undeveloped, privately-owned land located at the western edge of the Antelope Valley. Topography across the project site is relatively flat as the site is located south of the Tehachapi Mountains on lands that gradually slope downward from the northwest to the southeast.

The MDAB is characterized by hot summers, cold winters, large diurnal ranges in temperature, low relative humidity, and irregular rainfall. The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest, due to the proximity of the MDAB to the Pacific Ocean and the blocking nature of the Sierra Nevada Mountains to the north. Air masses, pushed onshore in southern California by differential heating, are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet above mean sea level [amsl]), the passes of which form the main channels for these air masses.

During the summer, the MDAB is generally influenced by a Pacific subtropical high pressure cell that sits off the coast to the west, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. Average temperatures recently recorded in the nearby City of Lancaster in eastern Los Angeles County range from a low of 29 degrees Fahrenheit (°F) in December to highs of 95°F in July. Annual rainfall averages approximately 5.1 inches per year. The MDAB averages between 3 and 7 inches of precipitation per year (from 16 to 30 days with at least 0.01 inch of precipitation). The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, which indicates at least three months have maximum average temperatures over 100.4°F.

Sensitive Receptors

Sensitive receptors are land uses or people considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Residences, schools, hospitals, convalescent homes, and parks are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The project is located on approximately 2,006 acres of undeveloped, privately-owned land in the western edge of the Antelope Valley and is zoned for agricultural use. Existing development in the project vicinity includes rural access roads, scattered rural residences, the Mojave Air and Space Port, an active Kern County Class III, non-hazardous municipal landfill, the Mojave Public Utility District's wastewater ponds, Edwards Air Force Base, mining, and solar energy. Land uses surrounding the project site include mostly

undeveloped agricultural and residential properties, as well as a few scattered residential dwellings at the southern and northern ends of the project. Other surrounding land uses included municipal facilities and mining operations. The nearest sensitive receptors consisting of single-family residences are located 58 feet north of the project site.

Ambient Air Quality Standards

National and State Standards

Regulation of air pollution is achieved through both federal and state ambient air quality standards and permitted emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the United States Environmental Protection Agency (USEPA) has identified criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM) (specifically PM₁₀ and PM_{2.5}), and lead. These pollutants are called “criteria” air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, USEPA has set “primary” and “secondary” ambient standards for each of the criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors, such as children, the elderly, and individuals suffering from chronic lung conditions, such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

Regional and Local Standards

NAAQS establish the level for an air pollutant above which detrimental effects to public health or welfare may result. NAAQS are defined as the maximum acceptable concentrations that, depending on the pollutant, may not be equaled or exceeded more than once per year or in some cases as a percentile of observations. California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (i.e., California Ambient Air Quality Standards [CAAQS]). California has also established CAAQS for sulfates, hydrogen sulfide, and vinyl chloride; however, air emissions of these pollutants are not expected to occur under the project and, thus, these pollutants are not addressed further in this EIR.

Table 4.3-1, *National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District Attainment Status*, presents both sets of ambient air quality standards (i.e., national and state) as well as attainment status for each of these standards within the EKAPCD jurisdiction. If a pollutant concentration in an area is lower than the established standard, the area is classified as being in “attainment” for that pollutant. If the pollutant concentration meets or exceeds the standard (depending on the specific standard for the individual pollutants), the area is classified as a “nonattainment” area. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated “unclassified.”

As shown in Table 4.3-1, in the southern portion of the EKAPCD, where the project is located, is currently classified as nonattainment for the California 1-hour and 8-hour ozone standards and PM₁₀ standards, and as serious nonattainment for the national 8-hour ozone, and as attainment and/or unclassified for the California and national standards of all of the other criteria pollutants (EKAPCD, 2018).

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

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Primary	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm	Nonattainment	—	Attainment
	8-hour	0.070 ppm		0.070 ppm	Nonattainment
Particulate Matter (PM ₁₀)	AAM	20 µg/m ³	Nonattainment	—	Unclassifiable/Attainment
	24-hour	50 µg/m ³		150 µg/m ³	
Fine Particulate Matter (PM _{2.5})	AAM	12 µg/m ³	Unclassified	12.0 µg/m ³	Unclassified/Attainment
	24-hour	No Standard		35 µg/m ³	
Carbon Monoxide (CO)	1-hour	20 ppm	Unclassified	35 ppm	Unclassified/Attainment
	8-hour	9.0 ppm		9 ppm	
Nitrogen Dioxide (NO ₂)	AAM	0.030 ppm	Attainment	0.053 ppm	Unclassified
	1-hour	0.18 ppm		0.100 ppm	
Sulfur Dioxide (SO ₂)	AAM	—	Attainment	0.030 ppm	Unclassified
	24-hour	0.04 ppm		0.14 ppm	
	3-hour	—		—	
	1-hour	0.25 ppm		0.075 ppm	
Lead	30-day Average	1.5 µg/m ³	Attainment	—	Unclassified/Attainment
	Calendar Quarter	—		1.5 µg/m ³	
	Rolling 3-Month Average	—		0.15 µg/m ³	
Sulfates	24-hour	25 µg/m ³	Attainment	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	Unclassified		
Vinyl Chloride	24-hour	0.01 ppm (42 µg/m ³)	Unclassified		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	Unclassified		

NOTES:

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

SOURCES: CARB 2016; EKAPCD 2018.

Local Air Quality

To assess local air quality impacts, the significance thresholds are based on the State carbon monoxide (CO) standards, shown previously in Table 4.3-1, which are 20 parts per million (ppm) for 1-hour CO concentration levels and 9 ppm for 8-hour CO concentration levels. If CO concentration levels with the project would be less than the standards, then there would be no significant impact on local air quality. If future CO concentrations with the project would be above the standards, then the increase due to the project would determine if the impact would be significant or less than significant. A project would have a significant impact on local air quality, if the project would result in an increase of 1 ppm or more for the 1-hour averaging time or 0.45 ppm or more for the 8-hour averaging time.

Ambient Air Monitoring

CARB has established and maintains a network of sampling stations (called the State and Local Air Monitoring Stations [SLAMS] network) that work in conjunction with local air pollution control districts and air quality management districts to monitor ambient pollutant levels. The SLAMS network in Kern County consists of eight stations that monitor various pollutant concentrations. The locations of these stations were chosen to meet monitoring objectives, which, for the SLAMS network, call for stations that monitor the highest pollutant concentrations, representative concentrations in areas of high population density, the impact of major pollution emissions sources, and general background concentration levels.

EKAPCD is responsible for monitoring air quality in the Kern County portion of the MDAB to determine whether pollutant concentrations meet state and national air quality standards. The Mohave-923 Poole Street and the Lancaster-43301 Division Street monitoring stations are the closest representative monitoring stations to the project site with sufficient data to meet USEPA and/or ARB criteria for quality assurance. The Mohave-923 Poole Street monitoring station monitors ambient concentrations of ozone, PM₁₀, and PM_{2.5}. Measured concentrations of NO₂ were obtained from the Lancaster-43301 Division Street monitoring station. There are no monitoring stations within the project vicinity that have available measurements for CO and SO₂ for the past three years. Ambient monitoring data obtained for 2016 through 2018 is summarized below in **Table 4.3-2, Air Quality Data Summary (2016-2018)**.

Criteria Air Pollutants

The following is a general description of the physical and health effects from the governmentally regulated air pollutants shown in Table 4.3-1.

TABLE 4.3-2: AIR QUALITY DATA SUMMARY (2016–2018)

Pollutant	Monitoring Year		
	2016	2017	2018
Ozone (O₃)^a			
Maximum concentration (1-hour/8-hour average)	0.104/0.093	0.097/0.085	0.111/0.094
Number of days state/national 1-hour standard exceeded	2/0	1/0	8/0
Number of days national 8-hour standard exceeded (2015 Standard)	52	35	53
Nitrogen Dioxide (NO₂)^b			
Maximum concentration (1-hour average)	48.8	46.5	47.6
Annual average (state)	8	8	9
Number of days state/national standard exceeded	0/0	0/0	0/0
Suspended Particulate Matter (PM_{2.5})^a			
Maximum concentration (24-hour)	25.7	26.9	39.0
Annual Average (national/state)	7.5	5.5	7.1
Number of days national standard exceeded (measured/calculated) ^c	0/0.0	0/0.0	0/0.0
Suspended Particulate Matter (PM₁₀)^a			
Maximum concentration (24-hour) (national/state)	139.2/130.3	93.4/85.7	93.1/86.5
Annual Average (national/state)	26.2/23.8	25.3/NA	26.7/NA
Number of days state standard exceeded (measured/calculated) ^c	18/18.9	10/NA	19/NA
Number of days national standard exceeded (measured/calculated) ^c	0/0	0/0	0/0
Carbon Monoxide (CO)			
Maximum concentration (8-hour average)	NA	NA	NA
Number of days state/national 8-hour standard exceeded	NA	NA	NA
Sulfur Dioxide (SO₂)			
Maximum concentration (24-hour)	NA	NA	NA
Annual Average	NA	NA	NA
Number of days state standard exceeded	NA	NA	NA

NOTES:

ppm = parts per million by volume, µg/m³ = micrograms per cubic meter, NA=Not Available^a Based on ambient concentrations obtained from the Mohave-923 Poole Street Monitoring Station.^b Based on ambient concentrations obtained from the Lancaster-43301 Division Street Monitoring Station.^c Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that a measurement would have exceeded the standard had measurements been collected every day.

SOURCE: CARB, 2019a.

Ozone (O₃)

Ozone (O₃) occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. At ground level, tropospheric, or “bad,” ozone is an air pollutant that damages human health, vegetation, and many common materials. Ozone is a key ingredient of urban smog. The troposphere extends to a level approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric, or “good,” ozone layer extends upward from approximately 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays (UV-B).

“Bad” ozone is what is known as a photochemical pollutant, which needs the combination of reactive organic gas (ROG) and oxides of nitrogen (NO_x), in the presence of sunlight to form. ROG and NO_x are emitted from various sources throughout Kern County. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Ozone is a regional air pollutant, which is generated over a large area and transported and spread by the wind. As the primary constituent of smog, ozone is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, it is not emitted directly into the air by specific sources but is created by sunlight acting on other air pollutants (the precursors), specifically NO_x and ROG. Sources of precursor gases number in the thousands and include common sources such as consumer products, gasoline vapors, chemical solvents, and combustion byproducts of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. Thus, high ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Health Effects

While ozone in the upper atmosphere protects the earth from UV-B, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular diseases, are aggravated by exposure to high ozone levels.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation, lung tissue damage, and a reduction in the amount of air inhaled into the lungs. Health effects include potential increased susceptibility to respiratory infections and reduced ability to exercise. Health effects are more severe in people with asthma and other respiratory ailments. People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. Also, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures. Elevated ozone concentrations also reduce crop and timber yields, damage

native plants, and damage materials such as rubber, paints, fabric, and plastics (CARB and American Lung Association of California, 2007).

Reactive Organic Gases (ROGs) and Volatile Organic Compounds (VOCs)

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including ROGs and volatile organic compounds (VOCs), which include all hydrocarbons, except those exempted by CARB. Therefore, ROGs are a set of organic gases based on state rules and regulations. VOCs are similar to ROGs in that they include all organic gases, except those exempted by Federal law. Both VOCs and ROGs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

Health Effects

The primary health effects of hydrocarbons result from the formation of ozone and its related health effects (see the ozone health effects discussion above). High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate federal or California ambient air quality standards for ROG. Carcinogenic forms of ROG are considered toxic air contaminants (TACs). An example is benzene, which is a carcinogen. The health effects of individual ROGs are described under the “Toxic Air Contaminants” heading below.

Carbon Monoxide (CO)

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, which contributes more than 66 percent of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Health Effects

When inhaled, CO enters the bloodstream and binds more readily to hemoglobin, the oxygen-carrying protein in blood, than oxygen, thereby reducing the oxygen-carrying capacity of blood and reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. Exposure to CO can cause chest pain in heart patients, headaches, and reduced mental alertness. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity,

reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and, with prolonged enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin in the blood. Exposure to elevated concentrations of CO weaken the heart's contractions and lower the amount of oxygen carried by the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome; and increased daily mortality rate (Fierro et al. 2001).

Oxides of Nitrogen (NO_x)

NO_x are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO_x is emitted from solvents and combustion processes in which fuel is burned at high temperatures, principally motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. In terms of NO_x emissions, the two principal species of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂), with the vast majority (95 percent) of the NO_x emissions being comprised of NO. NO is converted to NO₂ by several processes, the two most important of these are: (1) the reaction of NO with ozone; and (2) the photochemical reaction of NO with hydrocarbons. A brownish gas, NO_x is a strong oxidizing agent that reacts in the air to form corrosive nitric acid as well as toxic organic nitrates.

Health Effects

NO_x is an ozone precursor that combines with ROG to form ozone. See the ozone section above for a discussion of the health effects of ozone. Direct inhalation of NO_x can cause a wide range of health effects. Health effects of NO_x include irritation of the lungs, lung damage, and lowered resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of NO₂ may lead to changes in airway responsiveness and lung function in individuals with pre-existing respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO₂ may lead to increased susceptibility to respiratory infection and may cause irreversible lung damage. Other health effects associated with NO₂ are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO₂ may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. Clinical studies of human subjects suggest that NO₂ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children. Epidemiological studies have also shown associations between NO₂ concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NO_x contributes to a wide range of environmental effects both directly and indirectly when combined with other precursors in acid rain and ozone. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to the production of particulate nitrates. Airborne NO_x can also impair visibility. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication (a condition that promotes excessive algae growth, which can lead to a severe depletion of dissolved oxygen and increased levels of toxins harmful to aquatic life). Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum,

which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms. NO_x also contributes to visibility impairment (California Air Pollution Control Officers Association [CAPCOA], 2016).

Sulfur Dioxide (SO₂)

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO₂) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

SO₂ is a colorless, irritating gas with a “rotten egg” smell that is formed primarily by the combustion of sulfur-containing fossil fuels. Historically, SO₂ was a pollutant of concern in Kern County, but with the successful implementation of regulations, levels have been reduced significantly.

Health Effects

High concentrations of SO₂ can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Health effects from exposure to emissions of SO₂ include aggravation of lung diseases, especially bronchitis, and constricting of breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. Short-term exposures of individuals to elevated SO₂ levels during moderate activity may result in health effects including breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other health effects that have been associated with longer-term exposures to high concentrations of SO₂, in conjunction with high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs’ defenses. SO₂ also is a major precursor to particulate matter that is 2.5 microns or less (PM_{2.5}), which is a significant health concern and a main contributor to poor visibility (see also the discussion of health effects of particulate matter).

SO₂ not only has a bad odor, but can irritate the respiratory system. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. SO₂ can also irritate the lung and throat at concentrations greater than 6 ppm in many people; impair the respiratory system’s defenses against foreign particles and bacteria when exposed to concentrations less than 6 ppm for longer time periods; and enhance the harmful effects of ozone (combinations of the two gases at concentrations occasionally found in the ambient air appear to increase airway resistance to breathing).

SO₂ tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and particulates are also present. Effects are more pronounced among “mouth breathers,” e.g., people who are exercising or who have head colds. These effects include:

- Health problems, such as episodes of bronchitis requiring hospitalization associated with lower-level acid concentrations;
- Self-reported respiratory conditions, such as chronic cough and difficult breathing, associated with acid aerosol concentrations (individuals with asthma are especially susceptible to these effects. The

elderly and those with chronic respiratory conditions may also be affected at lower concentrations than the general population);

- Increased respiratory tract infections associated with longer term, lower level exposures to SO₂ and acid aerosols; and
- Subjective symptoms, such as headaches and nausea, in the absence of pathological abnormalities due to long-term exposure.

SO₂ easily injures many plant species and varieties, both native and cultivated. Some of the most sensitive plants include various commercially valuable pines, legumes, red and black oaks, white ash, alfalfa, and blackberry. The effects include:

- Visible injury to the most sensitive plants at exposures as low as 0.12 ppm for 8 hours;
- Visible injury to many other plant types of intermediate sensitivity at exposures of 0.30 ppm for eight hours; and
- Positive benefits from low levels in a very few species growing on sulfur-deficient soils.

Increases in SO₂ concentrations accelerate the corrosion of metals, probably through the formation of acids. SO₂ is a major precursor to acidic deposition. Sulfur oxides may also damage stone and masonry, paint, various fibers, paper, leather, and electrical components.

Increased SO₂ also contributes to impaired visibility. Particulate sulfate, much of which is derived from SO₂ emissions, is a major component of the complex total suspended particulate mixture.

Particulate Matter (PM₁₀ and PM_{2.5})

PM pollution consists of very small liquid and solid particles floating in the air. Some particles are large and dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. PM is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. PM also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. PM or airborne dusts are the small particles that remain suspended in the air for long periods of time. Particulates of concern are those that are 10 microns or less in diameter (PM₁₀) and 2.5 microns or less in diameter (PM_{2.5}). Thus, PM_{2.5} is a subset of PM₁₀. PM₁₀ and PM_{2.5} are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

The composition of PM₁₀ and PM_{2.5} can vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM₁₀ and PM_{2.5}. In addition to those listed previously, secondary particles can also be formed as precipitates from photochemical reactions of gaseous SO₂ and NO_x in the atmosphere to create sulfates (SO₄) and nitrates (NO₃), respectively. Secondary particles are of greatest concern during the winter months when low inversion layers tend to trap the precursors of secondary particulates.

In the western United States, there are sources of PM₁₀ in both urban and rural areas. PM₁₀ and PM_{2.5} are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. Because particles originate from a variety of sources, their chemical and physical compositions vary widely.

Health Effects

PM₁₀ and PM_{2.5} particles are small enough—about one-seventh the thickness of a human hair or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system’s natural defenses and can be trapped in the nose, throat, and upper respiratory tract. Health effects from exposure to PM₁₀ and PM_{2.5} begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases; heart and lung disease; and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. PM₁₀ and PM_{2.5} can aggravate respiratory disease and cause lung damage, cancer, and premature death. Sensitive populations, including children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis, are especially vulnerable to the effect of PM₁₀. Of greatest concern are recent studies that link PM₁₀ exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM₁₀ can also damage man-made materials and is a major cause of reduced visibility in many parts of the United States. Non-health-related effects include reduced visibility and soiling of buildings.

Premature deaths linked to particulate matter are now at levels comparable to deaths from traffic accidents and secondhand smoke. One of the most dangerous pollutants, fine particulate matter (e.g., from diesel exhaust) not only bypasses the body’s defense mechanisms and becomes embedded in the deepest recesses of the lung but also can disrupt cellular processes. Population-based studies in hundreds of cities in the United States and around the world have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks. Long-term studies of children’s health conducted in California have demonstrated that particulate pollution may significantly reduce lung function growth in children (CARB and American Lung Association of California, 2007).

A recent study provides evidence that exposure to particulate air pollution is associated with lung cancer. This study found that residents who live in an area that is severely affected by particulate air pollution are at risk of developing lung cancer at a rate comparable to nonsmokers exposed to secondhand smoke. This study also found approximately 16 percent excess risk of dying from lung cancer due to fine particulate air pollution (Dockery and Pope, 2006).

Another study shows that individuals with existing cardiac disease can be in a potentially life-threatening situation when exposed to high levels of fine air pollution. Fine particles can penetrate the lungs and cause the heart to beat irregularly, or can cause inflammation, which could lead to a heart attack (Peters et al., 2001).

Attaining the California particulate matter standards would annually prevent about 6,500 premature deaths, or 3 percent of all deaths. These premature deaths shorten lives by an average of 14 years. This is roughly equivalent to the same number of deaths (4,200 to 7,400) linked to secondhand smoke in 2000. In comparison, motor vehicle crashes caused 3,200 deaths, and 2,000 deaths resulted from homicide. Attaining the California particulate matter and ozone standards would annually prevent 4,000 hospital admissions for respiratory disease, 3,000 hospital admissions for cardiovascular disease, and 2,000 asthma-related emergency room visits. Exposure to diesel particulate matter causes about 250 excess cancer cases per year in California.

Sulfates

Sulfates (SO_4^{2-}) are particulate product that comes from the combustion of sulfur-containing fossil fuels. When sulfur monoxide or SO_2 is exposed to oxygen, it precipitates out into sulfates (SO_3 or SO_4).

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

Health Effects

CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in oxygen intake, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. When acidic pollutants and particulates are also present, SO_2 tends to have an even more toxic effect. In addition to particulates, SO_3 and SO_4 are also precursors to acid rain. SO_x and NO_x are the leading precursors to acid rain. Acid rain can lead to corrosion of man-made structures and cause acidification of water bodies. Sulfates are particularly effective in degrading visibility and, because they are usually acidic, can harm ecosystems and damage materials and property (CARB, 2009).

Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Historically, lead was used to increase the octane rating in automobile fuel. However, because gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels and that use has been mostly phased out, the ambient concentrations of lead have dropped dramatically. EKAPCD no longer monitors ambient levels of atmospheric lead in the MDAB.

Health Effects

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ. Recent studies also show that lead may be a factor in high blood pressure and subsequent heart disease. Lead can also be deposited on the leaves of plants, presenting a hazard to grazing animals and humans through ingestion (USEPA, 2012).

This highly toxic metal has been used for many years in everyday products and has been found to cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

If not detected early, children with high levels of lead in their bodies can suffer from:

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

Lead is also harmful to adults and adults with high levels of lead in their bodies can suffer from:

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

Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products.

Other Pollutants

Hydrogen Sulfide

Hydrogen sulfide (H₂S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. H₂S in the atmosphere would likely oxidize into SO₂ that can lead to acid rain. At low concentrations H₂S, which has a characteristic “rotten egg” smell, may cause irritation to the eyes, mucous membranes and respiratory system, dizziness and headaches. In high concentrations (800 ppm can cause death) hydrogen sulfide is extremely hazardous, especially in enclosed spaces. Occupational Safety and Health Administrations (OSHA) has the primary responsibility for regulating workplace exposure to H₂S.

Health Effects

Exposure to low concentrations of H₂S may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Exposure to higher concentrations (above 100 ppm) can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of H₂S (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in many individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of H₂S (0.00011–0.00033 ppm). Deaths due to breathing in large amounts of H₂S have been reported in a variety of different work settings, including

sewers, animal processing plants, waste dumps, sludge plants, oil and gas well drilling sites, and tanks and cesspools.

Vinyl Chloride

Vinyl chloride monomer is a sweet-smelling, colorless gas at ambient temperature. Landfills, publicly owned treatment works, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. PVC can be fabricated into several products, such as PVC pipes, pipe fittings, and plastics.

Health Effects

In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of liver angiosarcoma, which is a rare cancer, and have suggested a relationship between exposure cancers of the lung and brain. There are currently no adopted ambient air standards for vinyl chloride.

Short-term exposure to vinyl chloride has been linked with the following acute health effects (EPA, 2000):

- Acute exposure of humans to high levels of vinyl chloride via inhalation in humans has resulted in effects on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness.
- Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans. Acute exposure to extremely high levels of vinyl chloride has caused loss of consciousness; irritation to the lungs and kidneys; inhibition of blood clotting in humans; and cardiac arrhythmias in animals.
- Tests involving acute exposure of mice to vinyl chloride have shown high acute toxicity from inhalation exposure to the substance.

Long-term exposure to vinyl chloride concentrations has been linked with the following chronic health effects (EPA, 2000):

- Liver damage may result in humans from chronic exposure to vinyl chloride, through both inhalation and oral exposure.
- A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air have developed a set of symptoms termed “vinyl chloride disease,” which is characterized by Raynaud’s phenomenon (fingers blanch and numbness and discomfort are experienced upon exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).
- Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual and/or hearing disturbances, memory loss, and sleep disturbances) as well as peripheral nervous system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers) have also been reported in workers exposed to vinyl chloride.

Several reproductive/developmental health effects from vinyl chloride exposure have been identified (EPA, 2000):

- Several case reports suggest that male sexual performance may be affected by vinyl chloride. However, these studies are limited by lack of quantitative exposure information and possible co-occurring exposure to other chemicals.

- Several epidemiological studies have reported an association between vinyl chloride exposure in pregnant women and an increased incidence of birth defects, while other studies have not reported similar findings.
- Epidemiological studies have suggested an association between men occupationally exposed to vinyl chloride and miscarriages during their wives' pregnancies, although other studies have not supported these findings.
- Long-term exposure to vinyl chloride has also been identified as a cancer risk. Inhaled vinyl chloride has been shown to increase the risk of a rare form of liver cancer (angiosarcoma of the liver) in humans. Animal studies have shown that vinyl chloride, via inhalation, increases the incidence of angiosarcoma of the liver and cancer of the liver.

Visibility-Reducing Particles

Visibility-reducing particles is a measure of visibility. CARB does not yet have a measurement method that is accurate or precise enough to designate areas in the state as being in attainment or nonattainment. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. Except for Lake County (which is designated to be in attainment), California's attainment status with respect to visibility-reducing particles is currently designated as unclassified.

Toxic Air Contaminants

Toxic air contaminants (TACs), as known under the California Clean Air Act of 1988 (CCAA), are 10 pollutants have been identified through ambient air quality data as posing the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to brain and nervous system and respiratory disorders. CARB provides TAC emission inventories for only the larger air basins.

Sources include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners and motor vehicle exhaust. TACs do not have ambient air quality standards. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of the Act must prepare and submit toxic emission inventory plans and reports to CARB and periodically update those reports. While TACs do result in potential health risks for those exposed, the project would not emit TACs with the exception of diesel particulate matter, which, therefore, is the only TAC described further in this analysis.

Diesel Particulate Matter

Diesel particulate matter (DPM) is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about 5 percent of total DPM.

Health Effects

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by the California Office of Environmental Health Hazard Assessment (OEHHA). CARB estimates that approximately 70 percent of the cancer risk that the average Californian faces from breathing TACs stems from diesel exhaust particles (CARB, 2000).

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel-particle levels measured in California's air in 2000 could cause 540 "excess" cancers (beyond what would occur if there were no diesel particles in the air) in a population of one million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated similar cancer risks from diesel exhaust as those calculated by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks (OEHHA – ALA, 2001).

Airborne Fungus (Valley Fever)

Coccidioidomycosis, commonly referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers, and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also more likely to contract Valley Fever. After the fungal spores have settled in the lungs, they change into a multicellular structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

Approximately 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms include fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps may develop on the skin. One important fact to mention is that these symptoms are not unique to Valley Fever and may be caused by other illnesses as well. Identifying and confirming this disease require specific laboratory tests

such as: (1) microscopic identification of the fungal spherules in infected tissue, sputum or body fluid sample; (2) growing a culture of *CI* from a tissue specimen, sputum, or body fluid; (3) detection of antibodies (serological tests specifically for Valley Fever) against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin Test (called coccidioidin or spherulin), which indicate prior exposure to the fungus (Valley Fever Center for Excellence 2010). It should be noted that the incident rate for Valley Fever in Kern County within the MDAB is less than the incident rate in Kern County within the San Joaquin Valley Air Basin, where the highest incidence rate within California occurs.

Valley Fever is not contagious and, therefore, cannot be passed on from person to person. Most of those who are infected would recover without treatment within six months and would have a life-long immunity to the fungal spores. In severe cases, especially in those patients with rapid and extensive primary illness, those who are at risk for dissemination of disease, and those who have disseminated disease, antifungal drug therapy is used. The type of medication used and the duration of drug therapy are determined by the severity of disease and response to the therapy. The medications used include ketoconazole, itraconazole and fluconazole in chronic, mild-to-moderate disease, and amphotericin B, given intravenously or inserted into the spinal fluid, for rapidly progressive disease. Although these treatments are often helpful, evidence of disease may persist and years of treatment may be required (Valley Fever Center for Excellence, 2010).

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

TABLE 4.3-3: RANGE OF VALLEY FEVER CASES

Infection Classification	Percent of Total Diagnosed Cases
Unapparent infections	60 percent
Mild to moderate infections	30 percent
Infections resulting in complications	5–10 percent
Fatal infections	<1 percent
SOURCE: Valley Fever Center for Excellence, 2018.	

Asbestos

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. In addition, naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. According to information provided by the California Department of Conservation, Division of Mines and Geology, the project site is not located in an area where naturally occurring asbestos is likely to be present (California Department of Conservation 2000).

4.3.3 Regulatory Setting

In California, air quality is regulated by several agencies, including USEPA, CARB, and local air districts such as the EKAPCD. Each of these agencies develops rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, some State and local regulations may be more stringent than federal regulations. The project site is located within the MDAB, which is under the jurisdiction of the EKAPCD.

Federal

U.S. Environmental Protection Agency (EPA)

The principal air quality regulatory mechanism on the federal level is the CAA and in particular, the 1990 amendments to the CAA, and the NAAQS that it establishes. These standards identify levels of air quality for “criteria” pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants include ozone, CO, NO₂ (which is a form of NO_x), SO₂ (which is a form of SO_x), PM₁₀, PM_{2.5}, and lead. USEPA also has regulatory and enforcement jurisdiction over emission sources beyond state waters (outer continental shelf), and those that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking. USEPA’s primary role at the state level is to oversee the state air quality programs. USEPA sets federal vehicle and stationary source emission standards and oversees approval of all State Implementation Plans (SIP), as well as providing research and guidance in air pollution programs. The SIP is a state-level document that identifies all air pollution control programs within California that are designed to meet the NAAQS.

State

California Air Resources Board (CARB)

CARB, a department of the California Environmental Protection Agency (Cal/EPA), oversees air quality planning and control throughout California by administering the SIP. Its primary responsibility lies in ensuring implementation of the 1989 amendments to the CCAA, responding to the federal CAA requirements and regulating emissions from motor vehicles sold in California. CARB also sets fuel specifications to further reduce vehicular emissions.

The amendments to the CCAA establish the CAAQS, and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same criteria pollutants as the federal CAA, and also include sulfates, visibility reducing particulates, hydrogen sulfide and vinyl chloride (there are currently no NAAQS for these latter pollutants). They are also generally more stringent than the national standards in most cases, although recently promulgated NAAQS for 1-hour NO₂ and SO₂ can in some instances be more stringent than the respective CAAQS.

CARB is also responsible for regulations pertaining to TACs. The Air Toxics “Hot Spots” Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities

routinely release into their local air basin. Each ACPD and air quality management districts (AQMDs) in the state ranks the data into high, intermediate and low priority categories. When considering the ranking, the potency, toxicity, quantity, volume and proximity of the facility to receptors are given consideration by an air district.

CARB also has on- and off-road engine emission-reduction programs that would indirectly affect the project's emissions through the phasing in of cleaner on- and off-road engines. Additionally, CARB has a Portable Equipment Registration Program that allows owners or operators of portable engines and associated equipment to register their units under a statewide program to operate their equipment which must meet specified program emission requirements, throughout California without having to obtain individual permits from local air districts. Since the project is not proposing to install any applicable stationary sources, the AB 2588 program would not apply to the project.

In 2007, CARB enacted a regulation for the reduction of DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles (13 CCR Article 4.8, Chapter 9, Section 2449). This regulation provides target emission rates for particulate matter and NO_x emissions for owners of fleets of diesel-fueled off-road vehicles. It applies to equipment fleets of three specific sizes, and the target emission rates are reduced over time with full implementation by 2023 for large and medium fleets and 2028 for small fleets.

Title V and Extreme Designation

Title V of the CAA, as amended in 1990, creates an operating permit program for certain defined sources. In general, owner/operators of defined industrial or commercial sources that emit more than 25 tons per year (tpy) of NO_x and ROG must process a Title V permit. In "Extreme Designation" areas, the definition of a major source which requires Title V permitting, changes from 25 tpy to 10 tpy. This change results in more businesses having to comply with Title V permitting requirements under the Extreme nonattainment designation.

Title V does not impose any new air pollution standards, require installation of any new controls on the affected facilities, or require reductions in emissions. Title V does enhance public and EPA participation in the permitting process and requires additional record keeping and reporting by businesses, which results in significant administrative requirements.

California Renewables Portfolio Standard Program

Established in 2002 under SB 1078 and accelerated by SB 107 [2006] and SB 2 [2011], California's Renewable Portfolio Standard obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. In 2015, SB 350 further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. The California Public Utilities Commission (CPUC) and the California Energy Commission are jointly responsible for implementing the program. SCE is on track to meeting these obligations, and currently has contracts to generate 41.4 percent of its electricity from renewable resources by the year 2020 (CPUC, 2017). While not assumed in the analysis below, the legislature is likely to increase the existing RPS requirements; more specifically, SB 100 [2017] proposes to require a 50 percent renewable resource target by December 31, 2026, and 60 percent by December 31, 2030.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to air quality. The policies and implementation measures in the Kern County General Plan related to air quality that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

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

1.10.2. Air Quality

Policies

- Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.
- Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, will ensure that:
- (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
 - (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.
- Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.
- Policy 21: The County shall support air districts efforts to reduce PM₁₀ and PM_{2.5} emissions.
- Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.

Implementation Measures

- Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.
- Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:
1. Minimizing idling time.
 2. Electrical overnight plug-ins.
- Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:
1. Pave dirt roads within the development.
 2. Pave outside storage areas.
 3. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
 4. Use of alternative fuel fleet vehicles or hybrid vehicles.
 5. Use of emission control devices on diesel equipment.
 6. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
 7. Provide bicycle lockers and shower facilities on site
 8. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
 9. The use and development of park and ride facilities in outlying areas.
 10. Other strategies that may be recommended by the local Air Pollution Control Districts.
- Measure J: The County should include PM₁₀ control measures as conditions of approval for subdivision maps, site plans, and grading permits.

Chapter 5. Energy Element**Solar Energy Development****Policies**

- Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.
- Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The objective, policy, and implementation measure in the Mojave Specific Plan for air quality applicable to the project is provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 4. Conservation Element

Objective 4.6 Promote the improvement of air quality and the maintenance of State and Federal air quality standards in the Mojave area.

Policy 4.6.3 Encourage development designs that promote energy conservation and that minimize the direct and indirect emissions of air contaminants.

Chapter 10. Implementation

Measure N-2b) Air Quality studies will be required for industrial zone changes and conditional use permit projects which may emit affected pollutants, or toxic air contaminants. Prior to the approval of any industrial zone changes and/or conditional use permits, a level of impact determination shall be made, at which time the appropriate air quality analysis will be conducted.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. There are no goals, policies, or implementation measures in the West Edwards Road Settlement Specific Plan that are applicable to air quality. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detailed and refined manner unique to a smaller area of the County. Since there are no applicable goals, policies, or implementation measures within the West Edwards Road Settlement Specific Plan, refer to the applicable policies, goals, and implementation measures of the Kern County General Plan above.

Kern County Best Management Practices for Dust Management

In 2013, solar developers and planners from Los Angeles and Kern Counties began a series of meetings to discuss the best practices for protecting air quality and minimizing construction impacts from solar projects. The process incorporated feedback from the Mojave Air and Space Port, members of the Mojave Chamber of Commerce, Rosamond Municipal Advisory Council, and numerous other community leaders. Subsequent to these meetings, Kern County has developed a new approach to best control fugitive dust emissions and improve air quality in the high desert. The County's approach recognizes that effective dust control management must be site-specific and cannot be "one-size-fits-all" because standard methods do

not adequately meet the challenges of such a unique environment as the Mojave Desert region. An effective strategy has to be based on soil conditions, topography, adjacent land uses, and wind direction.

Conditions imposed on the new solar projects in Kern County are more extensive and rigorous than ever before. These include:

- Development of a Site-Specific Dust Control Plan that considers ongoing community stakeholder input, to the extent feasible and practicable.
- Use of Global Positioning System (GPS) or lasers to level posts, generally avoiding grading except when elevation changes exceed design requirements.
- When grading is unavoidable, it is to be phased and done with the application of approved chemical dust palliatives that stabilize the earth.
- Use of dust suppression measures during road surface preparation activities, including grading and compaction.
- Final road surfaces must be stabilized to achieve a measurable threshold friction velocity (TFV – the wind speed at which erosion starts) equal to or greater than 100 centimeters per second.
- If ground is cleared, plant roots must be left in place where possible.
- Expanded onsite watering processes.
- Installation of wind barrier fencing or screening.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved (i.e., without asphalt) surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least 2 feet of freeboard.
- Sending mailings to residents within 1,000 feet of a project site.

Kern County is also carefully monitoring all solar construction activities to ensure that all mitigation measures are followed and are adequate to minimize dust-related health concerns.

Eastern Kern Air Pollution Control District

EKAPCD has primary responsibility for regulating stationary sources of air pollution situated within its jurisdictional boundaries. To this end, EKAPCD implements air quality programs required by state and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their role in protecting air quality. EKAPCD is also responsible for managing and permitting existing, new, and modified sources of air emissions within the Mojave Desert portion of Kern County and also established the following rules and regulations to ensure compliance with local, state, and federal air quality regulations:

Rule 201

Rule 201 establishes permitting requirements for stationary sources. Although the project does not involve traditional stationary sources, EKAPCD adopted rules requiring commercial solar facilities to obtain Authority to Construct and Permit to Operate approval under Rule 201 to address fugitive dust emissions. Under Rule 201, these projects would be required to submit a Fugitive Dust Emissions Control Plan in accordance with Rule 402. In addition, the EKAPCD is requiring a Fugitive Dust Emissions Monitoring

Plan through which that each facility install upwind and downwind particulate matter air monitoring. The monitoring will be used to demonstrate compliance with the District Rules and Regulations.

Rule 210.1

Rule 210.1 establishes stationary source offset levels for new and modified stationary sources of air pollutants. Under this rule, EKAPCD has established required offsets for when the emissions from a source exceed the following trigger levels:

- PM_{10} – 15 tons/year
- SO_x (as SO_2) – 27 tons/year
- VOCs – 25 tons/year
- NO_x (as NO_2) – 25 tons/year

Rule 401

Rule 401 states that a person shall not discharge into the atmosphere, from any single source of emissions whatsoever, any air contaminant from any single emissions source for a period or periods aggregating more than 3 minutes in any one hour which is:

- As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
- Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection A [of the Rules].

Rule 402

Rule 402 of the EKAPCD's rules and regulations addresses significant man-made dust sources from active operations. An active operation is defined as "Activity capable of generating fugitive dust, including any open storage pile, earth-moving activity, construction/demolition activity, disturbed surface area, and non-emergency movement of motor vehicles on unpaved roadways and any parking lot served by an unpaved road subject to this Rule." Rule 402 applies to specified bulk storage, earthmoving, construction and demolition, and man-made conditions resulting in wind erosion, and includes the following requirements:

- A person shall not cause or allow emissions of fugitive dust from any active operation to remain visible in the atmosphere beyond the property line of the emission source.
- A person shall utilize one or more Reasonably Available Control Measures (RACM) or Bulk Material Control Measures (BMCM) to minimize fugitive dust emissions from each source type that is part of any active operation, including unpaved roadways.
- No person shall conduct a large operation without filing for and obtaining an approved fugitive dust emission control plan. Large operation is defined as "Any construction activity on any site involving 10 or more contiguous acres of disturbed surface area, or any earthmoving activity exceeding a daily volume of 10,000 cubic yards, or relocating more than 2,500 cubic yards per day of bulk materials at least three days per year."
- EKAPCD may require onsite PM_{10} monitoring for any large operation that causes downwind PM_{10} ambient concentrations to increase more than 50 micrograms per cubic meter above upwind

concentrations as determined by utilizing high-volume particulate matter samplers, or other EPA-approved equivalent method(s).

Rule 404.1

Rule 404.1 pertains to Particulate Matter Concentrations – Desert Basin and states:

- A person shall not discharge into the atmosphere from any single source operation, in service on the date this rule is adopted, particulate matter in excess of 0.2 grains per cubic foot of gas at standard conditions.
- A person shall not discharge into the atmosphere from any single source operation, the construction or modification of which commenced after the adoption of this Rule, particulate matter in excess of 0.1 grains per cubic foot of gas at standard conditions.

Rule 419

Rule 419 states that a person shall not discharge from any source whatsoever such quantities of contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or safety of such persons or the public or that cause or have a natural tendency to cause injury or damage to business or property.

Rule 423

Rule 423 adopts the USEPA's National Emissions Standards for Hazardous Air Pollutants by reference, which grants EKAPCD the ability to ensure that all sources of hazardous air pollution would comply with applicable standards, criteria, and requirements set forth in Title 40, Chapter 1, parts 61 and 63, of the Code of Federal Regulations that are in effect as of October 10, 2017.

2017 Ozone Attainment Plan

In 2008, USEPA adopted a more stringent 8-hour ozone NAAQS of 0.075 ppm. Although EKAPCD attained the 1997 8-hour ozone NAAQS, and the Indian Wells Valley planning area met the new (2008) ozone NAAQS, the EKAPCD's Design Value was higher than 0.075 ppm. In 2012, a portion of the EKAPCD was classified "marginal" nonattainment pursuant to the 2008, 8-hour Ozone NAAQS Air Quality Designations. However, EKAPCD failed to meet the 0.075 ppm standard by the applicable attainment date and was reclassified as "moderate" nonattainment, effective June 3, 2016. As a result, EKAPCD was required to submit a SIP revision for the nonattainment area by January 1, 2017, which showed compliance with statutory and regulatory conditions applicable to the "moderate" designation (EKAPCD, 2017).

EKAPCD, in partnership with CARB, conducted photochemical modeling along with supplemental analyses to determine whether the EKAPCD could attain the 2008 ozone NAAQS by the "moderate" nonattainment deadline. Modeling indicated EKAPCD would not meet the 0.075 ppm standard by the moderate deadline but could attain it by 2020, which is the attainment date for "serious" nonattainment areas. Pursuant to Section 181(b)(3) of the CAA "Voluntary Reclassification," EKAPCD requested CARB formally submit a request to USEPA asking for voluntary reclassification of EKAPCD from "moderate" to "serious" nonattainment for the 2008, 8-hour ozone NAAQS, and revise the attainment date to December 31, 2020 (EKAPCD, 2017). USEPA reclassified EKAPCD (except for the Indian Wells Valley planning area) as "serious" nonattainment on August 6, 2018 (USEPA, 2018).

The 2017 Ozone Attainment Plan was adopted by EKAPCD on July 27, 2017, which addresses all required elements, emissions reductions, and control measures necessary to demonstrate attainment with the 2008 8-hour ozone NAAQS by 2020. CARB approved the 2017 Ozone Attainment Plan as a revision to the SIP and submitted it to USEPA on October 25, 2017 (CARB, 2017). USEPA has not yet approved the plan.

Air Quality Conformity Determination for Transportation Plans and Programs

The CAA amendments of 1990 require a finding to be made stating that any project, program, or plan subject to approval by a metropolitan planning organization conforms to air plans for attainment of air quality standards. Kern Council of Governments (COG) is designated the Regional Transportation Planning Agency and Metropolitan Planning Organization for Kern County. In that capacity, Kern COG models air quality projections on population projections in conjunction with current general plan designations and estimated vehicle miles as well as the current Regional Transportation Plan (RTP) and the federal transportation plan for Kern County. These results are compared to pollutant budgets for each basin approved by USEPA in the 1999 base year. Kern County is contained within two air basins: San Joaquin Valley Air Basin and the MDAB. Each air basin has its own plans and pollutant budgets. Kern COG makes conformity findings for each air basin.

Kern County recently prepared a draft 8-hour ozone air quality conformity analysis to analyze Kern County's federally approved Federal Transportation Improvement Program (FTIP) and the 2014 RTP. The conformity findings conclude that the FTIP and RTP result in emissions that are less than the emission budgets of baseline emissions for CO, VOC, NO_x, and PM₁₀ (Kern COG, 2017).

4.3.4 Impacts and Mitigation Measures

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

Methodology

The air quality significance criteria were developed considering the CEQA significance criteria developed by the local air quality district in the project area, approved CEQA air quality checklists, and considering other federal criteria. The analysis presented within this section is based on both qualitative and quantitative approaches for determining air quality impacts associated with construction, operation, and maintenance of the project. The findings in the Air Quality and GHG Technical Report prepared for the project (located in Appendix C1 of this EIR), which was prepared in accordance with the EKAPCD's Guidelines for Implementation of the California Environmental Quality Act and Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* documents, were used to assess the project's impacts related to air quality.

Air Quality Plan Consistency

As a component of the cumulative impact analysis, the Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* states that the following should be included in the consistency determination for existing air quality plans:

- Discuss project in relation to Kern COG conformity and traffic analysis zones (TAZs).
- Quantify the emissions from similar projects in the Ozone Attainment Plan for the applicable basin. Discuss the Ozone Attainment Plan for the applicable air district, development, and relation to regional basin, Triennial Plan, and SIP.

Pollutant Emissions

The construction and operational emissions were estimated from several emissions models and associated spreadsheet calculations, depending on the source type and data availability. The primary emissions models used included CARB's on-road vehicle emission factor model (EMFAC) version 2014 and the California Emissions Estimator Model (CalEEMod). Short-term and annual emissions were estimated using project specific data and schedules within the models. Refer to Appendix C1 for details on equipment fleet, hours of operation, vehicle miles traveled and other assumptions used.

Construction

Construction of the project would generate emissions of ROG, NO_x, CO, SO_x, PM₁₀, and PM_{2.5} that could result in short-term air quality effects during the construction period. Emissions would originate from off-road equipment exhaust, employee and haul truck vehicle exhaust (on-road vehicles), fugitive dust from site grading and earth movement, and fugitive dust from concrete batching, if required.

County guidance states that an air quality assessment should include estimates of short-term construction emissions in tons per year. The estimates must include site grading and building construction emissions, with comparison to the adopted County CEQA thresholds and the applicable air district (EKAPCD) thresholds. Per the County's guidance, all assumptions should be clearly presented, including length of each construction phase, equipment that would be used during each phase, and the amount of soil disturbance, including any import or export of soil. The emission factors used to estimate emissions should be clearly documented, and the model output should be included in the report.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction of the project (CAPCOA, 2017a). CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction activities from a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type used to represent the project and size, construction schedule, and anticipated construction equipment utilization, were based on information provided by project applicant, or default model assumptions if project specifics were unavailable.

Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the project applicant. See Appendix C1 for a complete list of construction assumptions, including equipment, and vehicles. For purposes of estimating project emissions, and based on information provided by the project applicant, it is assumed that construction of the project would

commence in February 2020, which represents the earliest start date construction would initiate, and would last approximately 18 months, ending in August 2021. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

- **Off-Road Equipment:** Off-road equipment would be required for several construction activities including grading and structure construction. Based on assumptions provided in Appendix C1 of this EIR, several construction phases will run concurrently. For this analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. Emission factors for off-road construction equipment (e.g., loaders, graders, bulldozers) were obtained from the CalEEMod (version 2016.3.2) User's Guide appendix, which provides values per unit of activity (in grams per horsepower-hour) by calendar year (CARB 2017b). Criteria pollutants were estimated by multiplying the CalEEMod emission factors by the equipment inventory and activity assumptions (e.g., horsepower, hours of use per day) provided by the project applicant.
- **On-Road Vehicles:** On-road vehicles (e.g., pickup trucks, flatbed trucks, and passenger vehicles) would be required for material deliveries to the project site, material and equipment hauling within the project site, onsite crew and material movement, and employee commuting. Emission factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's light-duty automobile/light-duty truck vehicle categories. As provided in Appendix C1 of this EIR, peak daily construction employees would be approximately 475 (generating 950 one-ways trips) with an average of 300 workers daily. In addition to the 475 maximum daily workers traveling to the site there would be up to 80 truck trips per day at peak construction activity (trenching and system installation phases overlap). A total of up to 160 trips per day are anticipated during peak construction activities. Delivery of material and supplies would reach the site via on-road truck delivery via SR-14 or SR-58. The majority of the truck deliveries would be for the photovoltaic (PV) system installation, as well as any aggregate material that may be required for road base.
- **Water Trucks:** Water trucks would be required for several construction phases to provide fugitive dust control, with as many as three expected on a given day. Water consumption during construction is estimated to be approximately 200 acre-feet (AF) for dust suppression and earthwork over an approximately 18 to 30-month period. Panel rinsing is expected to be conducted up to four times annually as performance testing and weather and site conditions dictate. Construction, as well as operational water for panel rinsing, would be provided by onsite groundwater wells, the Mojave Public Utilities District (MPUD), or California City.

To account for fugitive dust emissions from vehicle travel on unpaved roadways in proximity of the project site, it was assumed that 2 miles per one-way trip for all trips would be on unpaved roads. Fugitive dust emissions from unpaved road travel was estimated using emission factors from EPA's AP-42 *Compilation of Air Pollutant Emission Factors, Section 13.2.2 Unpaved Roads* guidance for publicly accessible unpaved roads (EPA, 2006). Unlike publicly accessible unpaved roadways, fugitive dust emissions from vehicle travel on unpaved roadways within the project site were estimating using emission factors from EPA's AP-42 *Compilation of Air Pollutant Emission Factors, Section 13.2.2 Unpaved Roads* guidance for industrial unpaved roads (EPA, 2006).

The remaining miles traveled to and from the project site were assumed to be on paved roads. Fugitive dust from paved roads was estimated using emission factors from CARB's *Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust* (CARB, 2018).

- **Site Grading and Earth Movement:** Fugitive dust emissions from earth movement (e.g., site grading, and bulldozing) were quantified using emission factors from CalEEMod. Data on the total graded acreage were provided by the project applicant and the graded acreage was assumed to be 500 total acres. Per the applicant, it was assumed that all material would be balanced on site and therefore no material import or export is expected.
- **Concrete Batching:** The project may include a temporary concrete batch plant. Concrete is composed essentially of water, cement, sand (fine aggregate), and coarse aggregate. Fugitive dust emissions from concrete batching can result through the transfer of sand and aggregate, truck loading, mixer loading, and wind erosion from storage piles. Fugitive PM₁₀ and PM_{2.5} emissions from operation of the temporary batch plant were quantified using emission factors from EPA's *AP-42, Compilation of Air Pollutant Emission Factors*. It was assumed that the plant would process up to 11,000 cubic yards of concrete per year, or approximately 30 cubic yards per day.

Operation

Operation of the project would generate emissions of ROG, NO_x, CO, SO_x, PM₁₀, and PM_{2.5} that could result in long-term impacts on ambient air quality. During operation of the solar facility, there would be daily operational activities as well as periodic panel washing activities, water demand, weekly potable water deliveries, and periodic water hauling for panel cleaning. Emissions would result from off-road equipment exhaust from pressure washers and on-road vehicle trip generation for water trucks, vendor trucks, and employee trips.

Long-term operational emissions associated with the project were also calculated using CalEEMod, version 2016.3.2. Long-term emissions are caused by operational area, energy, and mobile source emissions. See Appendix C1, *Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Sanborn Solar Project, Kern County, California*, for a complete list of operational assumptions.

- **Area Sources:** CalEEMod emission factors were used to estimate operational emissions from area sources, which include architectural coatings. ROG off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers using during building maintenance. The ROG emission factor is based on the ROG content of the surface coatings, and EKAPCD's Rule 410.1 (Architectural Coating Controls) governs the ROG content for interior and exterior coatings. The reapplication rate of 10 percent of area per year is assumed. Based on the type of structure for the energy storage structure, it is assumed that the surface area for painting equals 2.0 times the floor square footage, with 75 percent assumed for interior coating and 25 percent assumed for exterior surface coating (CAPCOA, 2017b).
- **Energy Source:** Energy sources include emissions associated with project electricity usage and onsite power generation. Electricity use would contribute indirectly to criteria air pollutant emissions. Energy use was provided by the applicant for security lighting and any ancillary use for the energy storage structure.

The groundwater well pumps are operated by a diesel generator. The generator emits pollutants from the combustion of diesel fuel. The generator will be regulated by an operating permit under the EKAPCD's Rule 1160 for Internal Combustion Engines.

- **Mobile Source:** Mobile sources for the project would primarily be motor vehicles (automobiles and light-duty trucks) traveling to and from the project site. Motor vehicles may be fueled with

gasoline, diesel, or alternative fuels. Based on conservative estimates for vehicular travel, the project is anticipated to have up to 5,326 trips per year during operation, accounting for the commutes and performance of regular inspection and maintenance activities by ten full-time-equivalent staff.

Health Risk Assessment

A Health Risk Assessment (HRA) associated with construction emissions was prepared and follows the methodologies prescribed in the California Environmental Protection Agency/Office of Environmental Health Hazard Assessment's (OEHHA's) Air Toxics Hot Spots Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2015), which was adopted in 2015 replacing the previous 2003 guidance manual. A HRA associated with operational emissions was not performed as operation of the project would be minimal, consisting of routine inspection and maintenance only. For risk assessment purposes, PM₁₀ in diesel exhaust is considered DPM, originating mainly from off-road equipment operating at a defined location for a given length of time at a given distance from sensitive receptors. Less-intensive, more-dispersed emissions result from on-road vehicle exhaust (e.g., heavy-duty diesel trucks). These emissions could result in elevated concentrations of DPM at nearby receptors, which could lead to an increase in the risk of cancer or other health impacts. Consequently, an HRA was performed to determine the extent of increased cancer risks and chronic health indices at the maximally exposed receptors from project construction. HRA assumptions and results are provided in Appendix C2 of this EIR.

Ambient Air Quality Analysis

Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* requires a dispersion modeling analysis of the maximum 24-hour average concentrations of PM₁₀ and PM_{2.5} resulting from construction in comparison to applicable ambient air quality standards and thresholds; therefore, an ambient air quality analysis (AAQA) was performed for the project during construction only, as operation of the project would be minimal, consisting of routine inspection and maintenance only. The purpose of the AAQA is to determine whether the project's construction emissions would cause or contribute to exceedances of any CAAQS or NAAQS during construction. The AAQA was performed using a two-step process to determine impacts. Dispersion modeling assumptions and results are provided in Appendix C2 of this EIR.

CO Hotspots

Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to these CO “hot-spots” may have a greater likelihood of developing adverse health effects. The potential for the proposed project to result in localized CO impacts at intersections resulting from addition of its traffic volumes is assessed based on Kern County's suggested criteria, which recommends performing a localized CO impact analysis for intersections operating at or below level of service (LOS) E.

Valley Fever Exposure

While there are no specific thresholds for the evaluation of potential Valley Fever exposure, the potential for Valley Fever exposure as a result of the project is evaluated based on the anticipated earth-moving activities, and considers applicant-proposed measures and compliance with Rule 8021, Section 6.3, which

requires development and implementation of a dust control plan to help control the release of the *Coccidioides immitis* fungus during construction activities.

Visibility Impacts

The County guidance states that potential impacts to visibility should be evaluated for all industrial projects and any other projects, such as mining projects, that have components that could generate dust or emissions related to visibility.

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

Asbestos

There are no quantitative thresholds related to receptor exposure to asbestos. However, EKAPCD Rule 423 (National Emission Standards for Hazardous Air Pollutants and Source Categories) requires all projects to comply with the provisions of Title 40, Chapter I, Parts 61 and 63 of the Code of Federal Regulations.

Thresholds of Significance

Kern County

The Kern County CEQA Implementation Document and Kern County Environmental Checklist includes items taken from previous versions of Appendix G of the CEQA *Guidelines*. However, Appendix G was updated in 2018, resulting in minor changes to the checklist items. The analysis herein is based on the updated CEQA *Guidelines*, which differ slightly from the Kern County CEQA Implementation Document and Kern County Environmental Checklist.

The current CEQA *Guidelines* state that a project could have a significant adverse effect on air quality if it would:

- a. Conflict with or obstruct implementation of the applicable air quality plan;
- b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. Specifically, would implementation of the project would exceed any of the following adopted thresholds:
 - i. Eastern Kern Air Pollution Control District:
 - a. Operational and Area Sources:
 - 25 tons per year for ROG
 - 25 tons per year for NO_x
 - 15 tons per year for PM₁₀.
 - b. Stationary Sources – determined by District Rules:
 - Severe nonattainment: 25 tons per year

- Extreme nonattainment: 10 tons per year
- c. Expose sensitive receptors to substantial pollutant concentrations;
- d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The lead agency determined in the NOP/IS (Appendix A) that the following environmental issue area would result in less-than-significant impacts and was, therefore, scoped out of requiring further review in this EIR:

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

As discussed in the NOP/IS, the project would not have any stationary sources or equipment located onsite that would generate objectionable odors. During construction activities, only short-term, temporary odors from vehicle exhaust and construction equipment engines would occur. However, these odors would not affect a substantial number of people because the site is located in sparsely inhabited areas, and any odors would be temporary and would be dispersed rapidly. Therefore, further analysis is not warranted in the EIR.

Eastern Kern Air Pollution Control District

As discussed in the EKAPCD's *Guidelines for Implementation of the CEQA*, a project is determined to not have significant (as defined by CEQA, Section 21068) air quality impact on the environment, if operation of the project would (EKAPCD, 1999):

1. Emit (from all project sources subject to KCAPCD Rule 201) less than offsets trigger levels set forth in Subsection III.B.3. of KCAPCD's Rule 210.1 (New and Modified Source Review Rule);
2. Emit less than 137 pounds per day of NO_x or Reactive Organic Compounds (ROG) from motor vehicle trips (indirect sources only);
3. Not cause or contribute to an exceedance of any California or National Ambient Air Quality Standard;
4. Not exceed the District health risk public notification thresholds adopted by the EKAPCD Board; and
5. Be consistent with adopted federal and state Air Quality Attainment Plans. Also see EKAPCD Rule 208.2 (Criteria for Finding of No Significant Environmental Impact [California Environmental Quality Act]).
6. Expose sensitive receptors to substantial pollutant concentrations:
 - Cancer risk impacts – Maximum Exposed Individual (MEI) exceeds 10 in one million
 - Chronic non-cancer risk impacts – Chronic Hazard Index (HIC) exceeds 1.0;
7. Create objectionable odors affecting a substantial number of people.

Project Impacts

Impact 4.3-1: The project would conflict with or obstruct implementation of the applicable air quality plan.

In general, a project would not interfere with the applicable air quality plan if it is consistent with growth assumptions used to form the applicable air quality plan and if the project implements all reasonably available and feasible air quality control measures. The consistency with the Air Quality Management Plan (AQMP) is discussed below for project construction and operation.

Air quality impacts are controlled through policies and provisions of the EKAPCD, the Kern County General Plan, and the Kern County Code of Building Regulations. The CCAA requires air pollution control districts with severe or extreme air quality problems to provide for a 5 percent reduction in nonattainment emissions per year. The Attainment Plans prepared for the EKAPCD complies with this requirement. CARB reviewers approve or amend the document and forward the plan to EPA for final review and approval within the SIP.

Required Evaluation Guidelines

CEQA *Guidelines* and the CAA (Sections 176 and 316) contain specific references regarding the need to evaluate consistencies between the project and the applicable AQMP for the projects. To accomplish this, CARB has developed a three-step approach to determine project conformity with the applicable AQMP:

1. *Determination that an AQMP is being implemented in the area where the project is being proposed.* EKAPCD's most recently adopted air quality management plan is its Ozone Air Quality Attainment Plan (AQAP) that is approved by CARB and EPA.
2. *The project must be consistent with the growth assumptions of the applicable AQMP.* The project, as solar facility, would not introduce land uses that would generate vehicle trips or promote growth in the project area beyond what is projected in the Kern County General Plan.
3. *The project must contain in its design all reasonably available and feasible air quality control measures.* The project incorporates various policy and rule-required implementation measures that would reduce related emissions.

Because implementation of the project would not result in additional growth beyond what was anticipated by the Kern County General Plan and incorporated into the AQAP, conclusions may be drawn from the following criteria:

- The findings of the analysis conducted using Traffic Analysis Zones (TAZ) show that sufficient employment increase is planned for the project area.
- The primary source of emissions from the project would be from vehicles that are licensed through the state and whose emissions are already incorporated into CARB's emissions inventory.

Construction

The project would comply with all applicable EKAPCD rules and regulations, such as EKAPCD Rule 401 (Visible Emissions) and EKAPCD Rule 402 (Fugitive Dust). The project would not conflict with or propose to change existing land uses or result in population growth. While the project would not exceed any EKAPCD significance thresholds on daily basis, as shown in **Table 4.3-8, *Unmitigated Annual***

Construction Emissions, under Impact 4.3-3, construction the project on an annual would exceed the EKAPCD significance thresholds for PM₁₀. In addition, based on the AAQA, provided in Appendix C1 of this EIR and as shown in **Table 4.3-5, Unmitigated Construction Ambient Air Quality Impact Assessment Results**, under Impact 4.3-2, impacts would be potentially significant for PM₁₀ and PM_{2.5}. As such, the project would implement Mitigation Measure MM 4.3-1, which would require implementation of EPA Tier 3 or higher engines, among other measures. The project would also implement Mitigation Measure MM 4.3-2, which would require implementation of a Fugitive Dust Control Plan during construction of the project. While the implementation of these mitigation measures would reduce emissions of PM₁₀ and PM_{2.5} during construction of the project, these emissions would not be reduced below the EKAPCD significance threshold.

As the MDAB is in non-attainment for PM₁₀ and the project would result in significant temporary levels of PM₁₀ emissions during construction, the project could conflict with or delay the attainment of the standard. Therefore, the project would result in a significant and unavoidable temporary impact.

Operation

The project would be consistent with the existing land use designations in the current Kern County General Plan and would not introduce a land use that would induce population or housing growth that could result in a substantial increase in vehicle miles traveled and associated criteria pollutant emissions. When compared against the current zoning of the project site that would allow for the development of agricultural and residential uses, the solar facility would result in less operational emissions from mobile and area sources that would be generated. The only source of operational emissions associated with the project would be those generated from mobile sources traveling to and from the project area. As no onsite maintenance and operations staff are proposed, long-term emissions from the project would consist of sporadic vehicular emissions from employees, which would be minimal and would not result in a substantial increase in emissions. As shown below in **Table 4.3-10, Unmitigated Daily Maximum Operational Emissions**, and **Table 4.3-11, Unmitigated Annual Operational Emissions**, under Impact 4.3-3, the project's daily and annual operational emissions would be below EKAPCD's significance thresholds.

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

Decommissioning

The project is anticipated to operate for 30 to 35 years, after which the land could be converted to other uses in accordance with applicable land use regulations in effect at that time if its condition use permit is not extended. The project would be required to develop a decommissioning plan and financial assurances for review and approval by the Kern County Planning and Natural Resources Department. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, State, and County regulations.

At such time as the facility is decommissioned, equipment operation and site restoration activities would result in impacts to air quality. Given the fact that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to activities associated with construction of the project. Impacts would be less than those of construction, as no grading would occur. Even though no grading would occur during decommissioning of the project, it is conservatively assumed that decommissioning would similarly have a potentially significant and unavoidable temporary impact related to emissions PM₁₀ and PM_{2.5}, as with construction of the project. However, as with construction of the project, while emissions are considered temporary and not a long-term emissions source, short-term exceedances during decommissioning could obstruct EKAPCD's ability to achieve further progress toward attainment of ambient air quality standards. Therefore, similar to construction, the project would conflict with or obstruct the air quality planning goals set forth by EKAPCD, and decommissioning would result in a significant and unavoidable temporary impact.

Mitigation Measures

MM 4.3-1: Implement Diesel Emission-Reduction Measures During Construction. To control PM emissions during construction, the project proponent/operator and/or its contractor(s) shall implement the following measures during construction of the project, subject to verification by the County:

- a. Off-road equipment engines over 25 horsepower shall be equipped with EPA Tier 3 or higher engines, unless Tier 3 construction equipment is not locally available.
- b. All equipment shall be maintained in accordance with the manufacturer's specifications.
- c. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.
- d. Notification shall be provided to trucks and vehicles in loading or unloading queues that their engines shall be turned off when not in use for more than 5 minutes.
- e. Electric equipment shall be used to the extent feasible in lieu of diesel or gasoline-powered equipment.
- f. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOX emissions.
- g. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines.
- h. Existing electric power sources shall be used to the extent feasible. This measure would minimize the use of higher polluting gas or diesel generators.
- i. The hours of operation of heavy-duty equipment and/or the quantity of equipment in use shall be limited to the extent feasible.

MM 4.3-2: Implement Fugitive Dust Control Plan During Construction. To control fugitive PM emissions during construction, prior to the issuance of grading or building permits and any earthwork activities, the project proponent shall prepare a comprehensive Fugitive Dust Control Plan for review by the Kern County Planning and Natural Resources Department.

The plan shall include all EKAPCD-recommended measures, including but not limited to, the following:

- a. All soil being actively excavated or graded shall be sufficiently water to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soils areas. Watering shall take place a minimum of three times daily where soil is being actively disturbed, unless dust is otherwise controlled by rainfall or use of a dust suppressant.
- b. Vehicle speed for all on site (i.e., within the project boundary) construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads.
- c. Vehicle speeds on all offsite unpaved roads (i.e., outside the project boundary) construction vehicles shall not exceed 25 mph. Signs identifying vehicle speed limits shall be posted along unpaved site access roads and at the site entrance/exit.
- d. All onsite unpaved roads and offsite unpaved public project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20 percent opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g., worker commute periods, truck convoys). Reclaimed (non-potable) water shall be used to the extent available and feasible.
- e. The amount of the disturbed area (e.g., grading, excavation) shall be reduced and/or phased where possible.
- f. All disturbed areas shall be sufficiently watered or stabilized by EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20 percent opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available and feasible.
- g. All clearing, grading, earth moving, and excavation activities shall cease during periods when dust plumes of 20 percent or greater opacity affect public roads or nearby occupied structures.
- h. All disturbed areas anticipated to be inactive for periods of 30 days or more shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips.
- i. All active and inactive disturbed surface areas shall be compacted, where feasible.
- j. Equipment and vehicle access to disturbed areas shall be limited to only those vehicles necessary to complete the construction activities.

- k. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil-disturbing activities.
- l. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20 percent opacity. If necessary and where feasible, three-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust.
- m. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust.
- n. Where acceptable to the fire department and feasible, weed control shall be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering.
- o. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least 2 feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114.
- p. Gravel pads, grizzly strips, or other material track-out control methods approved for use by EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways.
- q. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or rocks/grates at the project entry points shall be used, when necessary, to remove soil deposits and minimize the track-out/deposition of soil onto nearby paved roadways.
- r. During construction paved road surfaces adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available.
- s. Portable equipment, 50 horsepower or greater, used during construction activities (e.g., portable generators, temporary concrete batch plant) shall require California statewide portable equipment registration (issued by CARB) or an EKAPCD permit.
- t. The Fugitive Dust Control Plan shall identify a designated person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures, as necessary, to minimize the transport of dust off site and to ensure compliance with identified fugitive dust control measures. Contact information for a hotline shall be posted on site any should any complaints or concerns be received during working hours and holidays and weekend periods when work may not be in progress. The names and telephone numbers of such persons shall be provided to the EKAPCD Compliance Division prior to the start of any grading or earthwork.
- u. Signs shall be posted at the project site entrance and written notifications shall be provided a minimum of 30 days prior to initiation of project construction to residential land uses located within 1,000 feet of the project site. The signs and written notifications shall include the following information: (a) Project Name;

(b) Anticipated Construction Schedule(s); and (c) Telephone Number(s) for designated construction activity monitor(s) or, if established, a complaint hotline.

- v. The designated construction monitor shall document and immediately notify EKAPCD of any air quality complaints received. If necessary, the project operator and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints.

Level of Significance after Mitigation

Impacts would be temporary significant and unavoidable during construction and decommissioning of the project, even with implementation of mitigation. Impacts related to operation would be less than significant.

Impact 4.3-2: The project would expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are particularly sensitive to air pollution because they are persons that are ill, elderly, or have lungs that are not fully developed. Locations where such persons reside, spend considerable amount of time, or engage in strenuous activities are also referred to as sensitive receptors. Typical sensitive receptors include inhabitants of long-term healthcare facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, childcare centers, and athletic facilities. As discussed previously, the project is located in a rural area and the nearest sensitive receptors consisting of single family residences are located 58 feet north of the project site.

Toxic Air Contaminants (TACs)

Projects are considered for potential health risks wherein a new or modified source of TACs is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to TACs. The primary TAC of concern for this project would be DPM emitted within the project site from the construction and operation phases of the project.

Based on the distance of sensitive receptors to the project site, an HRA was performed, as provided in the AAQA located in Appendix C2 of this EIR, to determine the potential cancer risk to the closest sensitive receptors of the project site due to DPM emissions resulting from diesel construction equipment and diesel trucks.

Table 4.3-4, *Estimated Health Risk During Construction*, illustrates the cancer risk and non-cancer hazard index. As shown therein, implementation of the project would not result in increased cancer risk or hazard index in excess of thresholds.

TABLE 4.3-4: ESTIMATED HEALTH RISK DURING CONSTRUCTION

Location	Cancer Risk (cases per million)	Chronic Hazard Index
Maximally Exposed Individual Resident	0.90	0.0005
Threshold	10.0	1.0
Is Threshold Exceeded?	No	No
SOURCE: Dudek, 2019.		

As illustrated above, project construction would emit TACs that would result in cancer risk and chronic hazard index at the sensitive receptor below the EKAPCD thresholds of 10 in a million, and 1 in a million, respectively. Overall, impacts associated with the project's potential to expose sensitive receptors to substantial TACs due to the project-generated construction emissions would be less than significant. With regard to operation of the project, as operational activities would be minimal, consisting of routine inspection and maintenance only, a quantitative HRA was not performed. Given the low DPM emissions expected from operation of the project (0.07 tons/year), the project risk threshold would not exceed the significant risk thresholds for cancer risk or Chronic Hazard Index. Therefore, the project's associated health risk impacts would be considered less than significant during operation of the project.

Criteria Air Pollutants

An AAQA, as provided in Appendix C2 of this EIR, was performed to determine whether the project's construction emissions would cause or contribute to exceedances of any CAAQS or NAAQS during construction. As provided in **Table 4.3-5, Unmitigated Construction Ambient Air Quality Impact Assessment Results**, construction of the project would result in construction activities that could generate ambient constructions of PM₁₀ and PM_{2.5} above the applicable thresholds.

TABLE 4.3-5: UNMITIGATED CONSTRUCTION AMBIENT AIR QUALITY IMPACT ASSESSMENT RESULTS

Step 1 – Ambient Air Quality Standard Basis				
Impact Parameter	Applicable Standard	AAQS	Maximum Concentration: Project + Background Levels	
		µg/m ³	µg/m ³	Exceed AAQS?
24-hour PM ₁₀	State	50	411	Yes (Step 2)
	Federal	150	424	Yes (Step 2)
Annual PM ₁₀	State	20	56	Yes (Step 2)
24-hour PM _{2.5}	Federal	35	69	Yes (Step 2)
Annual PM _{2.5}	State	12	10	No
	Federal	12	11	No
Step 2 – EPA Significant Impact Level (SIL) Basis				
Impact Parameter		Class II SILs	Project Construction	
		µg/m ³	µg/m ³	Exceed AAQS?
24-hour PM ₁₀		5	240	Yes
Annual PM ₁₀		1	32	Yes
24-hour PM _{2.5}		5	27	Yes

NOTES:

AAQS = Ambient Air Quality Standard; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; SIL = significant impact level
 Step 1 – the AAQS basis compared 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 PM₁₀ and PM_{2.5}, background concentrations already exceed the applicable AAQS (except for state and federal PM_{2.5} AAQ), so Step 2, the SIL basis, compared the project contributions to levels determined by the EKAPCD to cause or contribute to ambient air quality exceedances and impacts.

SOURCE: Dudek, 2019.

The project would implement Mitigation Measure MM 4.3-1, which would serve to reduce emissions of PM₁₀ and PM_{2.5} during construction of the project through compliance with EKAPCD Rules and Regulations for dust-control measures. While the implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 would reduce emissions of PM₁₀ and PM_{2.5} during construction of the project, these emissions would not be reduced below the EKAPCD significance threshold, as shown in **Table 4.3-6, *Mitigated Construction Ambient Air Quality Impact Assessment Results***. Therefore, the project would result in a significant and unavoidable temporary impact.

TABLE 4.3-6: MITIGATED CONSTRUCTION AMBIENT AIR QUALITY IMPACT ASSESSMENT RESULTS

Step 1 – Ambient Air Quality Standard Basis				
Impact Parameter	Applicable Standard	AAQS	Maximum Concentration: Project + Background Levels	
		µg/m³	µg/m³	Exceed AAQS?
24-hour PM ₁₀	State	50	234	Yes (Step 2)
	Federal	150	247	Yes (Step 2)
Annual PM ₁₀	State	20	32	Yes (Step 2)
24-hour PM _{2.5}	Federal	35	51	Yes (Step 2)
Annual PM _{2.5}	State	12	7	No
	Federal	12	9	No
Step 2 – EPA Significant Impact Level (SIL) Basis				
Impact Parameter	Class II SILs		Project Construction	
		µg/m³	µg/m³	Exceed AAQS?
24-hour PM ₁₀		5	63	Yes
Annual PM ₁₀		1	9	Yes
24-hour PM _{2.5}		5	9	Yes

NOTES:

AAQS = Ambient Air Quality Standard; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter

Step 1 – the AAQS basis compared 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 PM₁₀ and PM_{2.5}, background concentrations already exceed the applicable AAQS (except for state and federal PM_{2.5} AAQ), so Step 2, the SIL basis, compared the project contributions to levels determined by the EKAPCD to cause or contribute to ambient air quality exceedances and impacts.

SOURCE: Dudek, 2019.

With regard to operation of the project, as the project's long-term emissions are considered minimal, an ambient air quality analysis was not performed to determine if the project has the potential to impact ambient air quality through a violation of the ambient air quality standards or a substantial contribution to an existing or projected air quality standard. The project is considered less than significant for impacts to ambient air quality standards during operation of the project.

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 project would have trip generation associated with construction worker vehicles and vendor trucks. As construction is only expected to last 18 months, it would be considered temporary and would not result in a long-term source of CO emissions. In addition, the project would create minimal emission sources during operation. As identified in Section 4.15, *Transportation*, the project would not cause the LOS of any studied intersection or roadway to operate at LOS E or worse with implementation of mitigation measures. As such, a CO hotspot analysis is not required and the potential project-generated impacts associated with CO hotspots would be less than significant.

Valley Fever

The project has the potential to generate fugitive dust and suspend Valley Fever spores with the dust that could then reach nearby sensitive receptors. It is possible that onsite workers could be exposed to valley fever as fugitive dust is generated during construction. As such, the risk of exposure and contraction of Valley Fever as a result of the project would be increased from the existing conditions, and MM 4.3-3 is required to ensure that construction workers take the proper precautions to avoid Valley Fever exposure. In addition, MM 4.3-4 is proposed to ensure appropriate public awareness regarding Valley Fever. Therefore, implementation of the Mitigation Measure MM 4.3-3 and MM 4.3-4 would minimize the exposure to Valley Fever during construction and impacts would be reduced to less-than-significant levels.

Visibility Impacts

As discussed above under Methodology, Kern County has established criteria to determine if a project would potentially result in a visibility impact; however, the EKAPCD has not established guidance to address visibility in CEQA documents. Per the Kern County guidelines, a visibility analysis is not required since the project is not a large industrial stationary source project or a mining project, and it would not have long-term operational components that could generate dust or emissions plumes related to visibility. Compliance with EKAPCD Rule 402, including implementation of a dust control plan, is sufficient mitigation to reduce air quality effects from construction-related PM₁₀ emissions to a less-than-significant level. Therefore, the project’s potential to expose sensitive receptors to substantial pollutant concentrations associated with potential visibility impacts would be less than significant and no mitigation is required.

Asbestos

Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading of development projects, and at mining operations.

Serpentine and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. However, according to information provided by the Department of Conservation Division of Mines and Geology, the project site is not in an area likely to contain ultramafic rock or naturally occurring asbestos (California Department of Conservation 2000). Therefore, impacts associated with exposure of construction workers and nearby sensitive receptors to asbestos would be less than significant.

Health Effects of Criteria Pollutants

The EPA and CARB have established AAQS at levels above which concentrations could be harmful to human health and welfare, with an adequate margin of safety. Further, California air districts, like the EKAPCD, have established emission-based thresholds that provide project-level estimates of criteria air pollutant quantities that air basins can accommodate without affecting the attainment dates for the AAQS. Accordingly, elevated levels of criteria air pollutants as a result of a project's emissions could cause adverse health effects associated with these pollutants. The EKAPCD is designated as an attainment area for O₃ (1-hour), PM₁₀ and PM_{2.5} and nonattainment for O₃ (8-hour) under the NAAQS, and nonattainment for O₃, PM₁₀, and PM_{2.5} under the CAAQS.

Regarding health effects of criteria air pollutants, implementation of Mitigation Measure MM 4.3-1 would reduce the projects potential to result in regional health effects associated with ROG, NO_x, PM₁₀ and PM_{2.5}; however, localized health effects associated with NO_x, PM₁₀, and PM_{2.5} could occur. However, implementation of the mitigation measures described in Impact 4.3-1 and Impact 4.3-2, above, would reduce both localized and regional project generated construction and operational emissions.

In *Sierra Club v. County of Fresno* (S219783) (*Sierra Club*) the Supreme Court held that CEQA requires environmental impact reports to either (i) make a "reasonable effort" to substantively connect the estimated amount of a given air pollutant a project will produce and the health effects associated with that pollutant, or (ii) explain why such an analysis is infeasible (6 Cal.5th at 1165-66). However, the Court also clarified that that CEQA "does not mandate" that EIRs include "an in-depth risk assessment" that provides "a detailed comprehensive analysis ... to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and population wide health risks associated with those levels of exposure." Id. at 1665. However, correlating the project's criteria air pollutant to specific health impacts, particularly with respect to O₃ is not possible because there is no feasible or established scientific method to perform such analysis. This conclusion is supported by both the San Joaquin valley Air Pollution Control District (SJVAPCD) and the South Coast Air Quality Management District (SCAQMD) who have determined that this type of analysis is speculative and infeasible and there are no unique issues for the EKAPCD that would make this analysis invalid.

Writing as amicus curiae in *Sierra Club*, the SJVAPCD explained that "[t]he health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the (National Ambient Air Quality Standards [NAAQS]). Accordingly, while the type of individual facility/health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task" (SJVAPCD, 2015).

Instead, the SJVAPCD explained that it assesses a project's potential to exceed AAQS by evaluating the project's compliance with district thresholds of significance, which are measured in mass emissions (SJVAPCD, 2015). As explained by SJVAPCD, its thresholds are based on factual, scientific data and have been set at a level that ensures that AAQS will not be exceeded, taking into consideration all cumulative emission sources (SJVAPCD, 2015). The SJVAPCD explained that attempting to connect criteria pollutant emissions to localized health impacts will "not yield reliable information because currently available modeling tools are not well suited for this task" (SJVAPCD, 2015). Available models are only equipped to model the impact of all emissions sources on an air basin-wide or regional basis, not on a project-level basis, and "[r]unning the photochemical grid model used for predicting ozone attainment with emissions solely from one project would thus not be likely to yield valid information given the relative scale involved" (SJVAPCD, 2015).

This inability to "accurately ascertain local increases in concentration" of mass emissions and then to further link emissions with health effects is particularly true for O₃ and its precursors NO_x and ROG and VOC; O₃ is not directly emitted into the air, but is instead formed as ozone precursors undergo complex chemical reactions through sunlight exposure (SJVAPCD, 2015). Given the complex nature of this process, and the fact that O₃ can be transported by wind over long distances, "a specific tonnage amount of NO_x or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area" (SJVAPCD, 2015). For this reason, the photochemical analysis for O₃ is done on a regional scale and it is inappropriate to analyze O₃ impacts at a local or project-level basis because a localized analysis would at most be speculative, and at worst be misleading. Speculative analysis is not required by CEQA (CEQA *Guidelines* Section 15145; *Laurel Heights Improvement Association v. Regents of the University of California* 1988).

The SJVAPCD also explained that the disconnect between the tonnage of precursor pollutants and the concentration of O₃ or particulate matter formed in a particular area is especially important to understand in considering potential health effects because it is the concentration, not the tonnage, that causes health effects (SJVAPCD, 2015). The SJVAPCD explained that even if a model were developed that could accurately assess local increases in concentrations of pollutants like O₃ and particulates, it would still be "impossible, using today's models, to correlate that increase in concentration to a specific health impact" (SJVAPCD, 2015). The SJVAPCD stated that even a project with criteria pollutant emissions above its CEQA thresholds does not necessarily cause localized human health impacts as, even with relatively high levels of emissions, the SJVAPCD cannot determine "whether and to what extent emissions from an individual project directly impact human health in a particular area" (SJVAPCD, 2015). The SJVAPCD explained that this is particularly true for development projects like the project, where most of the criteria pollutants derive from mobile and area sources and not stationary sources. The SCAQMD also, as amicus curiae in *Sierra Club*, made similar points, reiterating that "an agency should not be required to perform analyses that do not produce reliable or meaningful results" (SCAQMD, 2015). SCAQMD agrees that it is very difficult to quantify health impacts with regard to O₃, opining that the only possible means of successfully doing so is for a project so large that emissions would essentially amount to *all* regional increases (SCAQMD, 2015). With regard to particulate matter, the SCAQMD noted that while the CARB has created a methodology to predict expected mortality from large amount of PM_{2.5}, the primary author of the methodology has reported that it "may yield unreliable results due to various uncertainties" and CARB staff has been directed by its Governing Board to reassess and improve it, which factor "also counsels against setting any hard-and-fast rule" about conducting this type of analysis (SCAQMD, 2015). The amicus briefs filed by SJVAPCD and SCAQMD in *Sierra Club* are attached as Appendix C3.

Mitigation Measures

Criteria Air Pollutants

Implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 would be required.

Valley Fever

MM 4.3-3: Minimize Exposure to Potential Valley Fever–Containing Dust. To minimize personnel and public exposure to potential Valley Fever–containing dust on and off site, the following control measures shall be implemented during project construction:

- a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations.
- b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground.
- c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
- d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers being exposed to dust shall leave the area until a truck can resume water spraying.
- e. All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system.
- f. Workers shall receive training to recognize the symptoms of Valley Fever, and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Kern County Planning and Natural Resources Department.
- g. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department.
- h. On-site personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health–approved respirators shall be provided to on-site personnel, upon request. Evidence of training shall be provided to the Kern County Planning.

MM 4.3-4: 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.

Level of Significance after Mitigation

Criteria Air Pollutants

With implementation of Mitigation Measure MM 4.3-1 and MM 4.3-2, temporary construction and decommissioning impacts would be significant and unavoidable.

Valley Fever

With implementation of Mitigation Measures MM 4.3-3 and MM 4.3-4, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The Kern County's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports require three steps for estimating the potential significance of cumulative impacts: (1) evaluate localized impacts (Guideline Instruction 16a); (2) evaluate consistency with existing air quality plans (Guideline Instruction 16b); and (3) summarize CARB air basin emissions (Guideline Instruction 16c).

The geographic scope for cumulative air quality impacts is a 6-mile radius for regional impacts and a 1-mile radius for impacts on sensitive receptors. These geographic scopes of analysis are appropriate for determining air quality impacts because of the Statewide, regional, and localized nature of air quality impacts, which could occur cumulatively with the project. As provided in Chapter 3, *Project Description*, 73 active developments are within Kern County and 27 active developments are within Los Angeles County.

Impact 4.3-3: The project would result in a cumulatively considerable net increase of any criteria pollutant for which the projects' region is nonattainment under applicable federal or State ambient air quality standards.

Construction

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by onsite sources (i.e., off-road construction equipment, soil disturbance, and VOC offgassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

Criteria air pollutant emissions associated with temporary construction activity were quantified using CalEEMod. Construction schedule assumptions, including phase type, duration, and sequencing, were based on information provided by the project applicant and is intended to represent a reasonable scenario based on the best information available. Default values provided in CalEEMod were used where detailed project information was not available. Details of the emission calculations are provided in Appendix C1 of this EIR.

As previously discussed, the project would comply with EKAPCD Rule 402 to control dust emissions during the grading activities and EKAPCD Rule 410.1, which requires the constructor to procure architectural coatings from a supplier in compliance with this rule. **Table 4.3-7, *Unmitigated Maximum Daily Construction Emissions***, illustrates the estimated maximum daily construction emissions generated during construction of the project. As shown therein, daily construction emissions would not exceed the EKAPCD significance threshold for ROG or NO_x in all construction years.

TABLE 4.3-7: UNMITIGATED MAXIMUM DAILY CONSTRUCTION EMISSIONS

Emissions Year	Pollutant (pounds/day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2020	23.57	84.16	203.62	0.88	303.41	36.78
2021	16.34	58.13	142.71	0.67	233.52	28.08
Maximum Daily Emissions	23.57	84.16	203.62	0.88	303.41	36.78
EKAPCD Threshold	25	25	NA	27	15	15
Is Threshold Exceeded?	No	No	No	No	Yes	Yes
SOURCE: Dudek, 2019.						

Table 4.3-8, *Unmitigated Annual Construction Emissions*, presents the annual construction emissions generated during construction of the project. As shown therein, the project would not exceed the EKAPCD annual significance thresholds for all criteria air pollutants except for PM₁₀ and PM_{2.5}. Therefore, impacts would be potentially significant before mitigation.

TABLE 4.3-8: UNMITIGATED ANNUAL CONSTRUCTION EMISSIONS

Emissions Year	Pollutant (tons/year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2020	2.76	15.55	21.26	0.09	97.36	10.91
2021	0.69	3.62	5.51	0.02	27.48	3.03
Total Emissions	2.76	15.55	21.26	0.09	97.36	10.91
EKAPCD Threshold	25	25	—	27	15	—
Is Threshold Exceeded?	No	No	—	No	Yes	—
SOURCE: Dudek, 2019.						

As discussed previously, the project would implement Mitigation Measure MM 4.3-1, which would require implementation of EPA Tier 3 or higher engines, among other measures, and Mitigation Measure MM 4.3-2, which would require implementation of a Fugitive Dust Control Plan during construction of the project. While the implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 would reduce emissions of PM₁₀ during construction of the project, the emissions for PM₁₀ would not be reduced below the EKAPCD significance threshold, as illustrated in **Table 4.3-9, *Mitigated Annual Construction Emissions***. Therefore, the project would result in significant and unavoidable temporary impacts from construction-related emissions of PM₁₀.

TABLE 4.3-9: MITIGATED ANNUAL CONSTRUCTION EMISSIONS

Emissions Year	Pollutant (tons/year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2020	2.76	15.56	21.27	0.09	26.06	3.56
2021	0.69	3.63	5.51	0.02	7.35	0.96
Total Emissions	2.76	15.56	21.27	0.09	26.06	3.56
EKAPCD Threshold	25	25	—	27	15	—
Is Threshold Exceeded?	No	No	—	No	Yes	—
SOURCE: Dudek, 2019.						

Operation

The project involves development of a 300 megawatt photovoltaic solar energy facility with a 3GWh battery storage system and overhead gen-tie line. Operation of the project would generate criteria air pollutants. As with construction, pollutant emissions associated with long-term operations were quantified using CalEEMod. **Table 4.3-10, *Unmitigated Maximum Daily Operational Emissions***, provides the maximum daily operational emissions, while **Table 4.3-11, *Unmitigated Annual Operational Emissions***, provides the annual operational emissions of the project. As illustrated in both tables, the project would not exceed the EKAPCD operational threshold for any criteria air pollutant. Impacts during operation of the project would be less than significant.

TABLE 4.3-10: UNMITIGATED MAXIMUM DAILY OPERATIONAL EMISSIONS

Emissions Source	Pollutant (pounds/day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Mobile	0.12	1.29	1.21	0.01	0.36	0.10
Maximum Daily Emissions	0.12	1.29	1.21	0.01	0.36	0.10
EKAPCD Threshold	137	137	—	—	—	—
Is Threshold Exceeded?	No	No	—	—	—	—
SOURCE: Dudek, 2019.						

TABLE 4.3-11: UNMITIGATED ANNUAL OPERATIONAL EMISSIONS

Emissions Source	Pollutant (tons/year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	0.15	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.02	0.02	0.00	0.00	0.00
Mobile	0.02	0.24	0.21	0.00	0.06	0.02
Off-road	0.00	0.03	0.04	0.01	0.01	0.00
Total Emissions	0.17	0.29	0.27	0.00	0.07	0.02
EKAPCD Threshold	25	25	—	27	15	—
Is Threshold Exceeded?	No	No	—	No	No	—

SOURCE: Dudek, 2019.

Cumulative Analysis

The project is located within the Kern County portion of the MDAB, which is an area that is designated as non-attainment for federal and State ozone standards as well as State PM₁₀ standards, and is under the jurisdiction of the EKAPCD. The EKAPCD's approach for assessing cumulative impacts is based on the forecasts of attainment and ambient air quality standards in accordance with requirements of the federal and State clean air acts.

Localized Impacts

As previously discussed, there were 73 active developments within Kern County and 27 active developments within Los Angeles County. Significant cumulative impacts from the project, when considered with nearby, reasonably foreseeable planned projects, would occur potentially, only during project construction. The majority of project emissions would occur temporarily during the construction phase. Subsequent to construction activities, there would be minimum emissions and insignificant cumulative impacts during operation of the project.

Neither Kern County nor EKAPCD has adopted a localized emissions threshold for criteria air pollutant construction emissions. In lieu of a localized emissions threshold the EKCAPD's standards thresholds are utilized in this analysis to determine local cumulative impacts. While over lapping construction schedule is possible for the project and Tentative Tracts or planned developments with potential cumulative air quality impacts, the project and Tentative Tracts or planned developments are required by EKAPCD regulations to implement fugitive dust control measures to comply with EKAPCD Rule 402. However, the project would still exceed the EKCAPCD's annual PM₁₀ threshold during construction and could potentially overlap with construction of other projects in the proximity that could further contribute to the exceedance. Therefore, the project would have a significant cumulative air quality impact with respect to localized construction emissions. Cumulative impacts during construction and decommissioning would be temporary significant and unavoidable. Cumulative impacts during operation would be less than significant.

Consistency with Existing Air Quality Plans

Consistency with the air quality plan, even at the cumulative level, is based on a comparison of project-generated growth in employment, population, and vehicle miles traveled within the region. As stated under Impact 4.3-1, above, as the MDAB is in non-attainment for PM₁₀ and the project would result in significant temporary levels of PM₁₀ emissions during construction, the project could potentially obstruct EKAPCD's ability to achieve further progress toward attainment of the State PM₁₀ standards. Impacts during construction and decommissioning were considered significant and unavoidable temporary impacts.

With regard to operation, the project is not expected to induce growth or result in trips or criteria pollutant emissions during operation that would conflict with EKAPCD's Ozone Air Quality Management Plan as the project is not expected to exceed thresholds for any nonattainment pollutant. Therefore, the project's incremental contribution to cumulative air quality impacts related to construction and operation would not be cumulatively considerable and would not compromise existing air quality plans. Cumulative impacts would be less than significant.

The power produced by the project would serve to reduce air pollutant emissions within the MDAB, to the extent that the power is used to offset power production from fossil fueled power plants within (or contributory to) the MDAB, and also by providing power to allow the displacement of fossil-fueled engines (such as agricultural pumps) with electrical power units. This power production is not projected within the existing air quality plans; thus, the solar facilities would further aid in reducing air pollutant emissions and increase the potential for attainment of the 1993 Ozone Attainment Plan.

California Air Resources Board (CARB) Air Basin Emissions

To evaluate the contribution of the project's operational emissions relative to the cumulative air quality conditions in Kern County and the MDAB, the project's specific emissions are compared to the 2016 SIP emission projection data for Kern County and the MDAB. The majority of project emissions would occur temporarily during the construction phase. During operation of the project, there would be minimal emissions and insignificant cumulative impacts. As shown in **Table 4.3-12, Annual Cumulative Percentage of Project Construction Emissions**, below, the increase emissions contributed by the project in relation to the total air basin appears to be insignificant since basin emissions would be the same regardless of whether or not the project is approved.

TABLE 4.3-12: ANNUAL CUMULATIVE PERCENTAGE OF PROJECT CONSTRUCTION EMISSIONS

Emissions Source	Pollutant (tons/year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Kern County ^a	138,382.37	28,064.85	67,054.15	3,405.45	19,881.55	7,059.10
MDAB ^b	28,309.00	64,276.50	101,616.00	3,978.50	48,435.50	13,541.50
Project	2.76	21.26	15.55	0.09	26.06	3.56
Project Percentage of Kern County	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Project Percentage of MDAB	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

a Based off of the 2016 SIP Emissions Projection Data for Kern County.

b Based off the 2016 SIP Emission Project Data for Mojave Desert Air Basin.

SOURCE: Dudek, 2019.

In addition, the power produced by the project could serve to reduce air pollutant emissions within the MDAB to the extent that the power is used to offset power production from fossil fueled power plants within (or contributory to) the MDAB, and also by providing power to allow the displacement of fossil-fueled engines (such as agricultural pumps) with electrical power units. Thus, the project's incremental contribution to the MDAB Emissions Inventory would not be cumulatively considerable. Cumulative impacts would be less than significant.

Cumulative Impacts Summary

The discussion provided evaluates localized impacts, including projects located within a 1- and 6-mile radius; evaluates consistency with existing air quality plans; and compares project emissions to CARB emission projections for the region, consistent with the criterion provided in Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*.

Mitigated emissions for construction related to ambient air quality impacts are summarized in Table 4.3-6. While the implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 would reduce emissions of PM₁₀ and PM_{2.5} during construction of the project, these emissions would not be reduced below the EKACPD significance threshold. In addition, implementation of these mitigation measures would also reduce annual emissions of PM₁₀ during construction of the project, the emissions for PM₁₀ would not be reduced below the EKACPD significance threshold, as illustrated in Table 4.3-9. Mitigation measures would ensure use of only Tier 3 off-road equipment to address exhaust emissions of PM₁₀.

While the project's emissions would be negligible in comparison to the air basin's total emissions, the project would still exceed the EKACPD's annual threshold for PM₁₀. Therefore, the project could delay the attainment of the standard. Additionally, construction of other projects in the proximity that could further contribute to the exceedance of the PM₁₀ threshold. Therefore, there would be a temporary cumulative impact during construction of the project.

Mitigation Measures

Implementation of Mitigation Measure MM 4.3-1 through MM 4.3-4 would be required.

Level of Significance after Mitigation

Cumulative impacts would be temporary significant and unavoidable during construction and decommissioning of the project after implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4. Cumulative impacts related to operation would be less than significant.

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4.4.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for biological resources that have been confirmed present, as well as those that have the potential to be present, on the project site. The physical and regulatory setting for the project are described, as well as an evaluation of the existing biological conditions on the project site and its vicinity. The criteria used to evaluate the significance of potential impacts on biological resources are indicated and the methods used in evaluating these potential impacts are described. The analysis presented in this section is based on a review of relevant literature as well as the Biological Resources Technical Report (BRTR) prepared for this project (Dudek, 2019). The BRTR is located in Appendix D of this EIR.

The literature reviewed to support the analysis of potential impacts to biological resources includes peer-reviewed journals, standard reference materials, and relevant databases on sensitive resource occurrences including the California Department of Fish and Wildlife (CDFW) Special Animals List (CDFW, 2018a), CDFW Special Vascular Plants, Bryophytes, and Lichens List (CDFW, 2018b), California Natural Diversity Database (CNDDB) (CNDDB, 2018), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS, 2018a), the U.S. Fish and Wildlife Service (USFWS) Threatened and Endangered Species List (USFWS, 2017a), and USFWS critical habitat data (USFWS, 2017b). These resources were reviewed to obtain occurrences of sensitive natural communities, State- and federally-listed species and non-listed special-status species, and USFWS Critical Habitat Units. The database queries included a search of the USGS 7.5-minute quadrangles in which the project site is located, Monolith, Mojave, Sanborn, Bissell, and Soledad Mountain, and the 14 surrounding quadrangles (i.e., nine-quad search). Other sources of information reviewed include aerial photographs (Google Earth, 2017, 2018), climatic data (WRCC, 2019), and project site plans.

4.4.2 Environmental Setting

Regional Setting

The project site is located at the western edge of the Antelope Valley, directly south of the community of Mojave in southeastern Kern County. Kern County is divided into three distinct geographical regions: the eastern third of the county occurs in the Mojave Desert; the middle section straddles the southern Sierra Nevada Range and the Transverse Ranges of the Tehachapi and San Emidio Mountains; and the western third occurs in the San Joaquin Valley. The nearest populated areas to the project site are the unincorporated community of Mojave, the unincorporated community of Rosamond, and the City of Tehachapi, which are approximately 1.5 miles northeast, 7.5 miles southeast, and 14 miles northwest of the project site, respectively.

Ten planned, existing, or permitted, solar energy and transmission facilities exist within a 10-mile radius of the project. The Edwards AFB Solar Project, located adjacent to the project's southern boundary, is currently in the planning stage. The High Desert Solar Project is immediately west of the project site and the RE Columbia Solar Project, RE Columbia Two Solar Project, RE Columbia Three Solar Project, and

RE Rio Grande Solar Project, approximately 1.5 miles to the west, were approved in 2011 and are currently operational. The RE Clearwater Solar Project and RE Yakima Solar Project, approximately 1.8 miles to the northwest, were approved in 2014, but to date have not been constructed. The Windhub Solar Project, approximately 7 miles to the west, was approved by the Board of Supervisors in January 2019 and construction is scheduled to begin in 2019. The SEPV Solar Project, approximately 7.5 miles to the west, is currently operational. Additional land usages in the vicinity of the project site consist of a mix of agricultural grazing, undeveloped land, and scattered single-family rural residences.

Climate

The climate within the Mojave Desert region is characterized by hot summer temperatures and low annual precipitation of less than 5 inches. Daily temperature swings of 40° Fahrenheit (F) can occur, with lows in the winter below or near freezing temperatures. Precipitation extremes are also common, with variations of 80 percent in annual precipitation (WRCC, 2019). Summer thunderstorms can drop more precipitation on a site in one event than the mean yearly precipitation for that location. High winds can occur, with peak wind velocities above 50 mph not being uncommon and winds of 100 mph occurring yearly (BLM, 2005).

Vegetation

Vegetation in the Mojave Desert region where this project is located is influenced by arid climatic conditions, topography, desert soils, and past land uses. Vegetation in the region includes a predominance of plant morphological adaptations to extreme aridity (e.g., waxy or resinous leaf cuticles, drought deciduous or succulent plants, woolly leaf pubescence, deep tap root systems) and saline-alkali soils (e.g., salt excretion, active transport systems). Vegetation structure is characterized by short-statured and widely spaced shrubs, and arborescent shrubs resulting from a competition for soil water resources (Twisselman, 1995; Hickman, 1993).

Three vegetation types contribute to 75 percent of the land cover in the Mojave Desert region (Davis et al., 1998): Mojave creosote bush (*Larrea tridentata*) scrub (16,398 square miles), Mojave mixed woody scrub (including Joshua tree [*Yucca brevifolia*] woodland, 3,646 square miles), and desert saltbush scrub (1,510 square miles). Other vegetation types occurring within the Mojave Desert region and Antelope Valley include desert and valley sink scrub, Mojave Desert wash scrub, and Mojave mixed steppe (Holland, 1986). Disturbed or non-native vegetation types within the region include California annual grasslands, agricultural lands, and developed areas.

Desert-adapted plant species often show low resilience to disturbance, typically requiring long periods to recover. Often full recovery to a natural community fails, and the community follows successional pathways towards alternative stable states dominated by invasive species (Beisner et al., 2003; Chartier and Rostagno, 2006). Portions of the Mojave Desert and Antelope Valley that were at one time cleared for agricultural or other development currently consist of moderate to highly degraded conditions, and often contain a high proportion of associated invasive, nonnative species (Thomas et al., 2004).

Wildlife

The Mojave Desert supports a variety of reptile, bird, and mammal species. Reptile species commonly occurring in the desert portion of Kern County include the side-blotched lizard (*Uta stansburiana*), western whiptail (*Cnemidophorus tigris*), desert spiny lizard (*Sceloporus magister*), gopher snake (*Pituophis melanoleucus*), glossy snake (*Arizona elegans*), and Mojave rattlesnake (*Crotalus scutulatus*). Bird species common to the

region include common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), house finch (*Haemorhous mexicanus*), loggerhead shrike (*Lanius ludovicianus*), and red-tailed hawk (*Buteo jamaicensis*). Mammal species typical of the area include white-tailed antelope ground squirrel (*Ammospermophilus leucurus*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Otospermophilus beechyi*), and bat species including California myotis (*Myotis californicus*), western small-footed myotis (*Myotis ciliolabrum*) and western pipistrelle (*Pipistrellus hesperus*).

Sensitive Natural Communities

Sensitive natural communities are designated by CDFW, or occasionally in local policies and regulations, and these communities are generally considered to have important functions or values for wildlife and/or are recognized as declining in extent and/or distribution. These communities are considered threatened enough to warrant some level of protection. For example, federal, State, and most local agencies consider wetlands and riparian habitat as sensitive communities. CDFW tracks communities it believes to be of conservation concern through the CNDDDB, and the plant alliances or associations with a State rank of S1 through S3 are considered to be sensitive communities by the State. Of the plant communities occurring within Mojave Desert region of Kern County, only two are designated as sensitive by CDFW. These include: valley needlegrass grassland and wildflower fields (CDFW, 2018c).

Surface Hydrology and Jurisdictional Waters

Within the arid and semi-arid western United States, limited precipitation restricts wetland and riparian resources to 1-5 percent of the land surface, a relatively low proportion compared to other systems globally; the proportion of wetland resources is even lower (<1 percent) in extremely arid areas such as the Mojave Desert and the Great Basin (USACE, 2008).

The project site is in the South Lahontan Hydrologic Region, which represents about 17 percent of the land (26,732 square miles) area in California (California Department of Water Resources, 2004). The region includes Inyo County and portions of Mono, San Bernardino, Kern, and Los Angeles counties. It is bounded to the north by the drainage divide between Mono Lake and East Walker River; to the west and south by the Sierra Nevada, Sierra Pelona, San Gabriel, San Bernardino, and Tehachapi mountains; and to the east by the State of Nevada. Drainage for most of the watershed in the region is internal. Along with the arid climate, this accounts for the presence of many dry lakebeds or playas in the region.

Wildlife Movement Corridors

Wildlife can move freely through open landscapes with minimal impediments such as paved roads and development. In denser landscapes where cover is harder for larger animals to penetrate, wildlife will often utilize man-made movement corridors such as scarcely travelled dirt roads and trails, as well as natural paths such as washes and small drainages. Topography across the project site is relatively flat as the site is southeast of the Tehachapi Mountains on lands that gradually slope downward from the northwest to the southeast. The project site is largely undeveloped with an open landscape, and thus wildlife can move relatively freely through the area. In addition, wildlife can utilize dirt roads within the project site to move throughout the area. Constraints to wildlife movement include State Route (SR)-14, Oak Creek Road, several other paved roads, an existing substation, wind turbines, the Southern Pacific Railroad, and scattered rural residential areas. The overall minimal development in this region of the Mojave Desert allows opportunities for wildlife movement between the desert areas and the Tehachapi Mountains to the northwest.

Local Setting

The project and surrounding land are located on generally undeveloped land that has historically been used for grazing operations. Topography across the project site is relatively flat as the site is south of the Tehachapi Mountains on lands that gradually slope downward from the northwest to the southeast. Elevations across the project site range from approximately 2,660 feet above mean sea level (amsl) in the northwest portion of the site to approximately 2,500 feet amsl in the southeast portion of the site. The project site is bounded by SR-58 and the Mojave Air and Space Port to the north, open space to the east, SR-14 and open space the west, and Edwards Air Force Base to the south, adjacent to the project site.

The project site consists mostly of native, undisturbed desert vegetation situated among a matrix of maintained and abandoned dirt roads. Surrounding lands also consist mostly of native habitat. Existing developments in the vicinity include renewable energy facilities and supporting infrastructures, rural access roads, scattered rural residences, and a mix of undeveloped land and agricultural grazing.

Plant Communities

A total of 134 plant species were identified on the project site during reconnaissance-level and floristic surveys conducted in 2017, 2018, and 2019. Ten vegetation communities and land cover types occur within the project site. The mapped vegetation communities and land cover types were defined using nomenclature from the Manual of California Vegetation (MCV) (Sawyer et al., 2009). The project site is vegetated mostly by allscale scrub (*Atriplex polycarapa* alliance) and creosote bush scrub (*Larrea tridentata* alliance). The MCV does not have classifications for areas mostly devoid of vegetation, or for vegetation communities dominated by non-native plants unless they have the potential habitat value for native species. Such areas do not have standard set of descriptors and are described as “land cover” types in the BRTR. A complete list of plant species identified on the project site during site surveys is provided in Appendix D of this EIR.

A description of the vegetation communities and land cover types at the project site are provided below. Acreages of vegetation communities and land cover types are provided in **Table 4.4-1, Vegetation Community or Land Cover Type on the Project Site.**

TABLE 4.4-1: VEGETATION COMMUNITY OR LAND COVER TYPE ON THE PROJECT SITE

Vegetation Community or Land Cover Type	Acreage
<i>Atriplex polycarpa</i> Scrub Alliance Allscale Scrub Alliance	1,968
<i>Ericameria nauseosa</i> Scrub Alliance Rubber Rabbitbrush Scrub Alliance	4
Non-native Grassland	97
<i>Ambrosia salsola</i> – <i>Larrea tridentata</i> Scrub Association ^a Cheesebush–Creosote Bush Scrub Association	71
<i>Ambrosia salsola</i> Scrub Association Cheesebush Scrub Association	47
<i>Larrea tridentata</i> Scrub Association Creosote Bush Scrub Association	469
<i>Larrea tridentata</i> – <i>Atriplex polycarpa</i> Scrub Association Creosote Bush–Allscale Scrub Association	11
<i>Ambrosia dumosa</i> Scrub Association White Bursage Scrub Association	78
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> Scrub Association Creosote Bush–White Bursage Scrub Association	35
Non-vegetated Channel	5
Disturbed	135
Urban/Developed	32

NOTE:

^a Associations were broken down into more detail within the BRTR to show the Sonoran and Mojavean Desert Scrub Alliances.

SOURCE: Dudek, 2019.

Allscale Scrub Alliance

The allscale scrub alliance has an open to continuous shrub canopy cover with shrubs less than 3 meters (10 feet) in height with a variable ground layer (Sawyer et al., 2009). The allscale scrub alliance occurs in the Sierra Nevada foothills, and along the central California Coast Ranges, southeastern Great Basin, and the Mojave, Sonoran, and Colorado Deserts. This alliance occurs at elevations ranging from 75 meters (246 feet) below sea level to 1,500 meters (4,921 feet) amsl. The allscale scrub alliance occurs on alluvial fans, washes, playas, lakebeds, and shores, and along upper terraces and edges of washes (Sawyer et al., 2009). Within the project site, the allscale scrub alliance is characterized as having greater than 75 percent relative cover of allscale in the shrub canopy, including 15 percent to 25 percent absolute cover. Emergent Joshua tree is present at a low cover. The understory of this alliance is characterized by Arabian schismus (*Schismus arabicus*) and redstem stork's bill (*Erodium cicutarium*). Other native species noted in this association include Anderson's boxthorn (*Lycium andersonii*) and Cooper's goldenbush (*Ericameria cooperi* var. *cooperi*). In the project site, there is one association in the allscale scrub alliance—allscale association.

Rubber Rabbitbrush Scrub Alliance

The rubber rabbitbrush alliance has a continuous or open shrub canopy cover with shrubs less than 3 meters (10 feet) in height with a sparse or grassy ground layer (Sawyer et al., 2009). The rubber rabbitbrush scrub alliance occurs along the central and northern California Coast Ranges, southern California mountains and valleys, southern Cascades, Klamath mountains, Modoc Plateau, Mono, Sierra Nevada, southeastern Great Basin, northwestern basin range, and the Mojave Desert. This alliance occurs at elevations ranging from sea level to 3,200 meters (10,498 feet) amsl. The rubber rabbitbrush scrub alliance occurs on all topographic

locations and is commonly found in disturbed areas (Sawyer et al., 2009). Within the project site, the rubber rabbitbrush scrub alliance is characterized as having greater than 75 percent relative cover of rubber rabbitbrush in the shrub canopy, including 25 percent to 55 percent absolute cover. The understory of this alliance is characterized by Arabian schismus, red brome (*Bromus madritensis* ssp. *rubens*), yellow pincushion (*Chaenactis glabriuscula*), and Menzies' fiddleneck (*Amsinckia menziesii*).

Non-native Grassland

Non-native grassland has a sparse to dense cover of annual grasses that is typically 0.2 meters (0.7 feet) to 0.5 meters (1.6 feet) tall and can be up to 1 meter (3 feet) tall. Grasses that occur in non-native grassland include wild oats (*Avena* spp.), bromes (*Bromus* spp.), fescue (*Vulpia* spp.), and Italian ryegrass (*Festuca perennis*). Forbs that occur with these grasses include California poppy (*Eschscholzia californica*), stork's bill (*Erodium* spp.), goldfields (*Lasthenia* spp.), phacelias (*Phacelia* spp.), gilies (*Gilia* spp.), and baby blue eyes (*Nemophila menziesii*) (Holland, 1986). Non-native grassland also includes land that is used as pasture for grazing purposes. Grasses such as barley (*Hordeum* spp.) and wild oats may grow in these areas. This land has very few native species. Within the project site, non-native grasslands are characterized as having an understory dominated by non-native grasses including Arabian schismus, red brome, cheatgrass (*Bromus tectorum*), and hare barley (*Hordeum murinum* ssp. *leporinum*).

Cheesebush–Sweetbush Scrub Alliance

The cheesebush–sweetbush alliance has an open to intermittent shrub canopy with a sparse or seasonally present ground layer (CNPS, 2018b). The cheesebush–sweetbush alliance occurs in the Great Valley, along the central California Coast Ranges, southeastern Great Basin, southern California mountains and valleys, and the Mojave, Sonoran, and Colorado Deserts. This alliance occurs at elevations ranging from sea level to 1,600 meters (5,249 feet) amsl. The cheesebush–sweetbush alliance occurs on valleys, flats, or rarely flooded low-gradient deposits, or can be found in washes or intermittent channels, arroyos, and washes (Sawyer et al., 2009). Within the project site, the cheesebush–sweetbush alliance is characterized as having greater than 50 percent relative cover of cheesebush in the shrub canopy, including 5 percent to 15 percent absolute cover. The understory of this alliance is characterized by Arabian schismus. Other native species noted in this association include creosote bush (*Larrea tridentata*), peach thorn (*Lycium cooperi*), white bursage (*Ambrosia dumosa*), rayless goldenhead (*Acamptopappus sphaerocephalus*) and allscale. In the project site, there is one association in the cheesebush–sweetbush scrub alliance: cheesebush and cheesebush–creosote bush association.

Creosote Bush Scrub Alliance

The creosote bush scrub alliance has an open to intermittent shrub canopy cover with shrubs less than 3 meters (10 feet) in height with an open to intermittent ground layer containing seasonal annuals or perennial grasses (Sawyer et al., 2009). The creosote bush scrub alliance occurs in the Mojave, Sonoran, and Colorado Deserts; southeastern Great Basin; and southern California mountains and valleys. This alliance occurs at elevations ranging from 75 meters below sea level to 1,000 meters (3,280 feet) amsl. The creosote bush scrub alliance occurs on upland slopes, alluvial fans, bajadas, and intermittent washes (Sawyer et al., 2009). Within the project site, the creosote bush scrub alliance is characterized as having greater than 50 percent relative cover of creosote bush in the shrub canopy, including 1 percent to 5 percent absolute cover. The understory of this alliance is characterized by red brome and Menzies' fiddleneck. Other native species noted in this association include allscale and Cooper's goldenbush. In the project site, there are two associations in the creosote bush scrub alliance: creosote bush association and creosote bush–allscale association.

White Bursage Scrub Alliance

The white bursage scrub alliance has an open to intermittent shrub canopy cover with trees less than 1 meter (3 feet) in height with an open to intermittent ground layer containing seasonal annuals (Sawyer et al., 2009). The white bursage scrub alliance occurs in the Mojave, Sonoran, and Colorado Deserts, and southern California mountains and valleys. This alliance occurs at elevations ranging from sea level to 1,700 meters (5,577 feet) amsl. The white bursage alliance occurs on upland slopes, rocky hillsides, alluvial fans, washes and river terraces, and sand fields (Sawyer et al., 2009). Within the project site, the white bursage scrub alliance is characterized as having greater than 25 percent relative cover of white bursage in the shrub canopy, including 1 percent to 5 percent absolute cover. The understory of this alliance is characterized by Arabian schismus and whitestem blazingstar (*Mentzelia albicaulis*). Other native species noted in this alliance include creosote bush, Anderson's boxthorn, peach thorn, Cooper's goldenbush, and rayless goldenhead. In the project site, there is one association in the white bursage scrub alliance—white bursage scrub association.

Creosote Bush–White Bursage Scrub Alliance

The creosote bush–white bursage scrub alliance has an open to intermittent, two-tiered shrub canopy cover (shrubs <3 meters or 9.8 feet) and the herbaceous layer is absent to intermittent with seasonal annuals (Sawyer et al. 2009). The creosote bush–white bursage scrub alliance occurs in the Mojave, Sonoran, and Colorado Deserts, and southern California mountains and valleys. This alliance occurs at elevations ranging from 75 meters (246 feet) below mean sea level to 1,700 meters (5,577 feet) amsl. The creosote bush–white bursage scrub occurs on washes and rills, bajadas, valleys, basins, upland slopes, mesas, alluvial fans, and erosional highlands (CNPS, 2018b). Within the project site, the creosote bush–white bursage scrub alliance is characterized as having 15 percent to 25 percent relative cover of creosote bush and 5 percent to 15 percent relative cover of white bursage. Other native species noted in this alliance include Joshua trees, cheesebush, and allscale. In the project site, there is one association in the creosote bush-white bursage scrub alliance—creosote bush-white bursage scrub.

Non-vegetation Channel

Areas mapped as non-vegetated channel consist of ephemeral drainages that lack wetland or riparian vegetation and only flow for up to 24 hours after a storm event. Because it is regulated by the RWQCB and CDFW as waters of the State, it is considered a sensitive biological resource under CEQA.

Disturbed Habitat

Areas mapped as disturbed habitat include primarily dirt roads, but also include areas where disturbance (e.g., grading/disking) has occurred which has resulted in a lack of vegetation.

Urban/Developed

Areas mapped as urban/developed land include areas devoid of vegetation, but also contain some kind of urban or developed feature such as a structure, pavement, landscaping, etc.

Wildlife Species

A total of 36 wildlife species were observed or otherwise detected on the project site, including 5 reptile species, 24 bird species, and 7 mammal species. Reptiles observed on the project site included common side-blotched

lizard (*Uta stansburiana*), the tiger whiptail lizard (*Aspidoscelis tigris*), long-nosed leopard lizard (*Gambelia wislizenii*), and Mojave rattlesnake (*Crotalus scutulatus*). Signs of desert tortoise (*Gopherus agassizii*) were also detected. Bird species that were observed included western meadowlark (*Sturnella neglecta*), American kestrel (*Falco sparverius*), house finch (*Haemorhous mexicanus*), ash-throated flycatcher (*Myiarchus cinerascens*), western kingbird (*Tyrannus verticalis*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), northern mockingbird (*Mimus polyglottus*), LeConte's thrasher (*Toxostoma lecontei*), California quail (*Callipepla californica*), house sparrow (*Passer domesticus*), burrowing owl (*Athene cunicularia*), rock pigeon (*Columba livia*), Eurasian collared-dove (*Streptopelia decaocto*), mourning dove (*Zenaida macroura*), greater roadrunner (*Geococcyx californianus*), loggerhead shrike (*Lanius ludovicianus*), European starling (*Sturnus vulgaris*), cactus wren (*Campylorhynchus brunneicapillus*), Bell's sparrow (*Artemisiospiza belli*), dark-eyed junco (*Junco hyemalis*), and white-crowned sparrow (*Zonotrichia leucophrys*). Mammal species that were identified on the site included the coyote (*Canis latrans*), desert kit fox (*Vulpes macrotis arsipus*), bobcat (*Lynx rufus*), blacktailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), and California ground squirrel (*Spermophilus beecheyi*).

Special-Status Species

Special-status species are defined as those plants and wildlife that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, State, or local agencies as being under threat from development pressures as well as natural causes. Some of these species receive specific protection that is defined by the federal or State Endangered Species Acts. Other species have been designated as special-status on the basis of adopted policies and expertise of State resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities and/or special districts to meet local conservation objectives. Special-status species include the following:

- Species listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA).
- Species that meet the definitions of rare or endangered under CEQA *Guidelines* Section 15380.
- All of the plants constituting California Rare Plant Rank (CRPR) 1B and Rank 2B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (CESA) of the Fish and Game Code, and are eligible for State listing.
- Species covered under an adopted Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP).
- Wildlife designated by the CDFW as "species of special concern" or "special animals."
- Wildlife "fully protected" in California (Fish and Game Code Sections 3511, 4700, and 5050).
- Wildlife species protected as "fur-bearing mammals" (Fish and Game Code Section 4000 et seq.).
- Avian species protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3500–3516).

It should be noted that most avian species are afforded certain protections by the MBTA and California Fish and Game Code (Sections 3500–3516); however, many of these, including some raptors, are common species and are not considered special status on that basis alone.

The special-status plant and wildlife species that have the potential to occur on the project site are described under the following subsections. **Table 4.4-2, *Special-Status Plant Species with the Potential to Occur on the Project Site***, and **Table 4.4-3, *Special-Status Wildlife Species with the Potential to Occur on the Project Site***, below, summarize the special-status plant and wildlife species, respectively, that were evaluated for their potential to occur within the project site. Species with no potential (not likely to occur) to occur on the project site were excluded from further analysis, but can be found in the BRTR (Dudek, 2019). The “Potential to Occur” categories indicated in Tables 4.4-1 and 4.4-2 are defined as follows:

- **Low:** The project site and/or immediate area only provide limited habitat for the species. In addition, the known range of the species may be outside of the immediate project site.
- **Moderate:** The project site and/or immediate area provide suitable habitat for the species, and proposed development may impact the species.
- **High:** The project site and/or immediate area provide ideal habitat conditions for the species and/or known populations occur in the immediate area.
- **Present:** Species observed on the site or diagnostic signs of the species observed on the site during focused surveys or other site visits.

Special-Status Plants

Fourteen special-status plant species were identified in the CNDDDB, CNPS, and USFWS databases as occurring in the project region (i.e., within the 19 USGS quadrangles that were queried), 8 of these species were determined not likely to occur due to lack of suitable habitat or range constraints. The species with a potential to occur are listed below in Table 4.4-2, which is based on the BRTR (Dudek, 2019). Table 4.4-2 identifies the regulatory status, habitat requirements, and blooming period for each plant species, as well as the potential for the species to occur on the project site based on focused survey results.

Willins’ cholla (*Cylindropuntia echinocarpa*), beavertail pricklypear (*Opuntia basilaris* var. *basilaris*), and Joshua tree (*Yucca brevifolia*) are not considered a special-status species as described under the “Special-Status Species” section and, thus, are not included in Table 4.4-2; however, these species are covered under the California Desert Native Plants Act. All three species are found on the project site.

Of the six special-status plant species identified in Table 4.4-2, one special-status plant species, alkali mariposa lily (*Calochortus striatus*), was observed within the project site during the floristic surveys. One individual was observed in the northern portion of the project site within allscale scrub, and seven other individuals were observed in the southern portion of the project site within allscale scrub. No special-status species has a high or moderate potential to occur based on suitable habitat and/or known occurrences in the vicinity of the project site. Five species have low potential to occur based on marginally suitable habitat and/or known occurrences in the vicinity of the project site: recurved larkspur (*Delphinium recurvatum*), Barstow woolly sunflower (*Eriophyllum mohavense*), pale-yellow layia (*Layia heterotricha*), sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisarum*), and Latimer’s woodland gilia (*Saltugilia latimeri*). The one species that was present on the project site is described in further detail below.

Alkali mariposa lily is a member of the lily family, which primarily occurs in shadscale scrub, chaparral, alkali meadows, and wetland-riparian vegetation communities. The species is listed as 1B.2 by the CNPS, which means “moderately threatened” in California. Eight individual alkali mariposa lilies were observed within the project site during floristic surveys conducted in May 2017. One individual was observed in the northern portion of the project site within allscale, and the remaining seven individuals were observed in the southern portion of the project site within allscale.

TABLE 4.4-2: SPECIAL-STATUS PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status	State Status	CRPR ^a Status	Habitat Requirements	Potential to Occur and Explanation
<i>Calochortus striatus</i>	alkali mariposa lily	None	None	1B.2	Inhabits alkaline meadows and ephemeral washes within chaparral, chenopod scrub, and Mojavean desert scrub. Occurs between 229 and 5,232 feet. Blooms from April to June.	Present. A total of 8 alkali mariposa lily individuals were observed within the project site.
<i>Delphinium recurvatum</i>	recurved larkspur	None	None	1B.2	Found in shadscale scrub, valley grassland, and foothill woodland. Occurs between 5 and 2,590 feet. Blooms from March to June.	Low. There are known occurrences 4 miles south of the project site along Highway 14. Species not observed during 2017 and 2019 surveys.
<i>Eriophyllum mohavense</i>	Barstow woolly sunflower	None	None	1B.2	Found in chenopod scrub, Mojavean desert scrub, playas. Occurs between 1,640 and 3,150 feet. Blooms from March to May.	Low. Known occurrence within 4 miles of area, and suitable habitat present. Species not observed during 2017 and 2019 surveys.
<i>Layia heterotricha</i>	pale-yellow layia	None	None	1B.1	Occurs in cismontane woodland, coastal scrub, Pinyon and juniper woodland, valley and foothill grassland in open clay soils. Occurs between 980 and 5,595 feet. Blooms between March and June.	Low. Known occurrence less than 4 miles away and suitable habitat is present. Species not observed during 2017 and 2019 surveys.
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i>	sagebrush Loeflingia	None	None	2B.2	Found in desert dunes, Great Basin scrub, Sonoran desert scrub. Occurs between 2,295 and 5,300 feet. Blooms from April to May.	Low. Known occurrence less than 2 miles away and suitable habitat is present. Species not observed during 2017 and 2019 surveys.
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	None	None	1B.2	Found in chaparral, Mojavean desert scrub, Pinyon and juniper woodland. Occurs between 1,310 and 6,235 feet. Blooms from March to June.	Low. Closest known occurrence is 5 miles away. Suitable soils and vegetation present. Species not observed during 2017 and 2019 surveys.

^a Description of Status Codes:

CRPR 1B.1 = Eligible for State listing, CEQA review; = seriously threatened in California

CRPR 1B.2 = Eligible for State listing, CEQA review; moderately threatened in California

CRPR 1B.3 = Eligible for State listing, CEQA review; not very threatened in California

CRPR 2B.2 = Eligible for State listing, CEQA review; rare, threatened, or endangered in California, but more common elsewhere; moderately threatened in California.

SOURCES: Dudek, 2019.

Special-Status Wildlife

Seventeen special-status wildlife species were identified in the CNDDDB and USFWS database queries within the USGS 7.5-minute quadrangles that encompass the project. These included two reptiles, eight birds, and seven mammals. These species, identified in the literature review and database search, are listed and described below in Table 4.4-3, *Special-Status Wildlife Species with the Potential to Occur on the Project Site*, which identifies the regulatory status, habitat requirements, and potential for the species to occur on the project site based on focused survey results.

Of the 17 special-status wildlife species identified in Table 4.4-3, six species were determined potentially to be present on the project site: desert tortoise (only sign and burrows observed) (*Gopherus agassizii*), burrowing owl (observed) (*Athene cunicularia*), Swainson's hawk (observed) (*Buteo swainsoni*), loggerhead shrike (observed) (*Lanius ludovicianus*), LeConte's thrasher (observed) (*Toxostoma lecontei*), and desert kit fox (only natal den and sign observed) (*Vulpes macrotis arsipus*). Based on suitable habitat and/or known occurrences in the vicinity to the project site, seven species were determined to have high or moderate potential to occur on site: golden eagle (wintering) (*Aquila chrysaetos*), ferruginous hawk (wintering) (*Buteo regalis*), prairie falcon (foraging) (*Falco mexicanus*), Lawrence's goldfinch (*Spinus [Carduelis] lawrencei*), pallid bat (foraging) (*Antrozous pallidus*), Townsend's big-eared bat (foraging) (*Corynorhinus townsendii*), and American badger (*Taxidea taxus*). All remaining species in Table 4.4-3 were determined to have low potential to occur. Species determined to be present or with high or moderate potential to occur are discussed further below.

Reptiles

Desert Tortoise. The desert tortoise is a federally and state-threatened species and consequently, "take" of such species would require the issuance of Incidental Take Permits from both the USFWS and CDFW to comply with FESA and CESA to comply with state and federal law. No desert tortoises were directly observed during surveys, in any portion of the project site. However, sign of desert tortoise were observed in four locations on the southern portion of the site only. During surveys in spring 2017, biologists observed a Condition Class 1 desert tortoise burrow (with sign of recent use), including tracks, and observed older scat at a separate location. Both locations were on the southern site. In 2018, along the gen-tie route, biologists observed a Condition Class 2 desert tortoise burrow (in good condition, but with no recent sign of use) and Class 3 desert tortoise burrow (in deteriorated condition). In addition to the confirmed tortoise sign or burrow observations, biologists observed 12 Condition Class 4 burrows (in good condition, possible desert tortoise) on the southern site, 3 such burrows along the access route along East Reed Avenue, and 2 along the gen-tie area. No confirmed desert tortoise signs or burrows were observed on the northern site, and no possible desert tortoise burrows (Condition Classes 4 or 5) were observed on the northern site. The northern site, which was cultivated prior to 1970, is highly disturbed, and the herbaceous layer is dominated by non-native annuals (especially Arabian schismus and redstem stork's bill), which makes it marginally suitable habitat for desert tortoise.

Birds

Burrowing Owl. Within California, the burrowing owl, a California Species of Special Concern and Bird of Conservation Concern (BCC), occurs in open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Burrowing owls were recorded at two locations in the northern site, burrowing owl sign was recorded on the northern site, and CNDDDB includes occurrences

from the region, including one approximately 4 miles southwest of the northern site and 3.4 miles south of the gen-tie area. The grasslands of the northern site provide the most suitable location for this species in the project site, including for nesting and wintering.

Swainson's Hawk. Swainson's hawk is a State-threatened species and a BCC. It nests in California in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and the Mojave Desert. The species continues to breed across its entire historical range, but in significantly lower numbers. In the Antelope Valley the species is known to nest in low densities in desert scrub habitat with a Joshua tree overstory. Throughout its range the species nests almost exclusively in trees, typically in stands with few trees in riparian areas, agricultural environments, near rural residents, in oak savannah, and in juniper-sage flats. No Swainson's hawk nests or evidence of Swainson's hawk nesting were observed during focused Swainson's hawk surveys. However, Swainson's hawks were observed on two occasions, one of which was off site, in different locations during surveys. On April 17, 2017, an adult intermediate morph was observed flying over the gen-tie area, west of Mojave and within the existing wind farms. Behavior was consistent with a migrant, at a time of year when migrants are still passing through southern California. The individual was first observed flying north between the wind turbines, before it began soaring and gaining altitude, and eventually flying off high and well to the northeast. Although the bird was in view for approximately 10 minutes, it showed no indication of foraging or stopping in the area. This individual was not detected subsequently and no Swainson's hawks were detected in this area during any surveys after this date.

On April 28, 2017, a second-year Swainson's hawk was briefly observed perched in a Joshua tree more than a mile outside of the Swainson's hawk survey area (and 6.2 miles south of the gen-tie area), in an area south of Backus Road and west of SR-14. This individual quickly left its perch and used the Joshua tree woodland to shield its departure from the area. The observer searched a wide area within the Joshua tree woodland, but did not find a suitable nest structure and did not find the second-year Swainson's hawk. Approximately 1 hour and 15 minutes later, a distant raptor was detected that was likely this individual, soaring over an area nearby. As a second-year bird (just less than 1-year-old), this individual was too young to be nesting (Dudek, 2019). No Swainson's hawks were detected in this vicinity during subsequent surveys.

A variety of nests were observed during surveys that were potentially suitable for Swainson's hawks. Nearly all of these nests were confirmed to be nests of common ravens. Several other nests were confirmed as being unoccupied during the nesting season. Suitable nests were observed in a variety of trees, including Joshua trees (*Yucca brevifolia*), pines (*Pinus* sp.), tamarisk (*Tamarix* sp.), and eucalyptus (*Eucalyptus* sp.). The majority of nests were near human habitation, and very few were within the wind farms within the northwestern and west-central parts of the Swainson's hawk survey area. No Swainson's hawks were observed in the vicinity of any suitable nest structure. The nearest CNDDDB occurrences are 6.8 and 7.2 miles south-southwest of the project site at its nearest point. No agricultural lands suitable for foraging occur within 5.0 miles of the project site. Therefore, the potential for this species to nest in the project site is low. Furthermore, based on 2017 survey results, this species is currently absent as a breeder from the vicinity.

Loggerhead Shrike. Loggerhead shrike is a California Species of Special Concern, occurring in most of California and absent only in the Sierra Nevada and Cascade Mountain ranges. The species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Observations in 2017 included an adult with a juvenile west of SR-14 and in the gen-tie area, a family group near a nest structure at the edge of the northern site, and regular observations in the vicinity. Extensive suitable nesting habitat, particularly near Joshua trees, is present in the project site.

LeConte's Thrasher. The LeConte's thrasher is a BCC species that is resident in low to middle elevations in the deserts of eastern California and within a limited, disjunct range in the western San Joaquin Valley and adjacent smaller valleys, from southwestern Fresno County southward. They maintain year-round home ranges in open scrub habitats, usually with sandy soils or in alkaline terrain, including desert washes, creosote scrub, alkali desert scrub, desert succulent scrub, Joshua tree habitats, and saltbush scrub. LeConte's thrashers were observed occasionally within desert scrub habitats with scattered Joshua trees during surveys, including two locations on the project site and multiple observations in the vicinity during Swainson's hawk surveys. Abundant suitable habitat for resident LeConte's thrashers is present on the southern project site and the gen-tie area.

Golden Eagle. The golden eagle is a CDFW fully protected species that is also protected under the Bald Eagle and Golden Eagle Protection Act. It is an uncommon permanent resident and migrant throughout California, except the center of the Central Valley. No golden eagles were observed during surveys. Focused surveys were not conducted; however, it is likely the species would have been detected during surveys, particularly during Swainson's hawk surveys, if present within 5 miles of the project site. CNDDDB includes an occurrence mapped generally in the Soledad Mountain area, approximately 4 miles from the northern site and 3.4 miles south of the gen-tie area. However, this territory was last known to be occupied in 1969. The next nearest occurrences are from the Tehachapi Mountains (Dudek, 2019). CNDDDB includes several additional occurrences in the Tehachapi Mountains within 10 miles of either the gen-tie area or the project site (Dudek, 2019).

Ferruginous Hawk. The ferruginous hawk is a BCC for the wintering season and is not known to nest in California. It is an uncommon winter resident and migrant at lower elevations and open grasslands in the eastern deserts of California, the Modoc Plateau, the Central Valley, and the Coast Ranges. No ferruginous hawks were observed during surveys of the project site, but surveys were not conducted at an appropriate time of year for detecting this species. CNDDDB includes several occurrences in the vicinity, but this database greatly underrepresents reports of this species. As noted in the BRTR, the Antelope Valley is considered to be an important wintering area for the species in California, although most likely winter closer to agricultural areas, which are absent near the project site, and grasslands, which are sparse and limited to the gen-tie area (Dudek, 2019).

Prairie Falcon. The prairie falcon is a BCC that has a broad geographic range in the west and central United States. It breeds in California primarily in the Coast, Transverse, and Peninsular Ranges; the eastern deserts; and the northeast. It also winters in the Central Valley, central coast, and southern California coast. No prairie falcons were observed in the project site. Although focused surveys for this species were not conducted, it likely would have been detected during Swainson's hawk surveys, if nesting within 5 miles of the project site. Nesting habitat is absent in the project site, although suitable nesting sites likely occur nearby in the Soledad Mountain area, approximately 4 miles from the project site and 3.4 miles south of the gen-tie area. Current gold and silver mining operations on the north slope of the mountain provide disturbance that limits the likelihood of the species nesting there. However, prairie falcons have the potential to forage in the project site, especially during the non-nesting season.

Lawrence's Goldfinch. Lawrence's goldfinch is a BCC that is locally common along the western edge of the southern deserts, from Santa Clara and Monterey counties south through coastal slopes, and occasionally surrounding the foothills of the Central Valley. It breeds primarily in California, but also south into northern Baja California, Mexico. Breeding tends to be concentrated in the foothills of the southern Sierra Nevada through the southern coastal ranges, and southward into the transverse ranges. This species was not observed in the project site, although several were observed in the developed area adjacent to the

gen-tie area during Swainson's hawk surveys in June 2017. It is relatively unlikely to nest in most of the project site, although it has a moderate potential to nest near existing development, such as occurs near the southern site, where they may be attracted to moister areas around exotic plantings.

Mammals

Desert Kit Fox. The desert kit fox is not a federally- or State-listed species and is not afforded protection under the FESA or CESA. However, the species is protected by Title 14, California Code of Regulations (CCR), Section 460, prohibiting the take of desert kit fox at any time, and the California Fish and Game Code Section 4000 et seq. and CDFW regulations as a fur-bearing mammal. Found in arid climates, the species prefers grasslands, open desert scrub, and occasionally farmland for denning and foraging. Dens are typically located deep within a complex of burrows. The species is known to feed on rodents and lagomorphs, including jackrabbit (*Lepus* spp.) and cottontails (*Sylvilagus* spp.). Desert kit fox was observed once in the project site, when an active natal den was observed on the southern site in the spring 2017, and desert kit fox sign was observed (tracks, scat) at several other locations in the project site. Desert kit fox has a high potential to occur in much of the project site, including the gen-tie route.

Pallid Bat. The pallid bat is a California Species of Special Concern that occurs throughout California, except at the highest elevations of the Sierra Nevada range. This species prefers rocky outcrops, cliffs, and crevices with access to open communities and land covers for foraging. Foraging habitats for pallid bats are varied and include grasslands, oak savannahs and woodlands, riparian woodland, open pine forests, talus slopes, desert scrub, and agricultural areas. Focused surveys were not conducted for bats in the survey area. However, pallid bats have been detected at Soledad Mountain, approximately 3.5 miles southwest of the northern site and approximately 2.5 miles south of the gen-tie area, and it also has potential to roost in human-made structures in the area (Dudek, 2019). The project site supports no roosting habitat; however, suitable foraging habitat occurs throughout the area.

Townsend's Big-eared Bat. Townsend's big-eared bat is a California Species of Special Concern that occurs through California with the exception of alpine and subalpine areas of the Sierra Nevada, although it has been found in the subalpine zone in the White Mountains to the east of the Sierra Nevada. In California, it roosts in caves, mines, tunnels, buildings, and other human-made structures. Focused surveys were not conducted for bats in the survey area. However, during surveys of Soledad Mountain in 2006, Townsend's big-eared bats were detected at several locations, including within approximately 2.5 miles south of the gen-tie area and within approximately 3.5 miles of the northern site. No roosting habitat is present in the project site. However, Townsend's big-eared bats roosting in the Soledad Mountain area potentially forage over the project site, which supports extensive suitable foraging habitat.

American Badger. The American badger (*Taxidea taxus*), a California Species of Special Concern, is a carnivore in the weasel family (*Mustelidae*). The American badger is also afforded protection as a fur-bearing mammal under Section 4000 et seq. of the California Fish and Game Code. The species ranges throughout California excepting the humid forested regions in the State's extreme northwest. They are most abundant in drier open stages of most shrub, forest, and herbaceous habitats. American badgers require friable soils and open, uncultivated ground where they can dig burrows for shelter. They prey mainly on burrowing rodents such as ground squirrels and kangaroo rats. No badgers were observed in the project site. A single badger was observed at a burrow entrance approximately 3.5 miles west southwest of the gen-tie area. Suitable habitat is present throughout the project site and the gen-tie area.

TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status	State Status	Habitat Requirements	Potential to Occur
Reptiles					
<i>Anniella pulchra</i>	silvery legless lizard	None	SSC ^a	Inhabits coastal dunes, woodlands in valley-foothill areas, chaparral, and coastal scrub. Requires friable soils with higher moisture content.	Low. The project site is at the edge of the species range; however, this species was observed 1 mile south of gen-tie area during surveys for the Mojave West Solar Project.
<i>Gopherus agassizii</i>	desert tortoise	FT	ST ^a	Prefers creosote bush habitat with annual wildflower blooms. Requires friable soils for burrow and nest construction. Occurs in most desert habitats. The species population is lower in Joshua tree habitat types.	May be Present on southern site, low potential to occur on the northern site. No desert tortoises were directly observed during surveys; however, sign (scat) and one confirmed desert tortoise burrow (Condition Class 1) was observed on the southern site. Condition Class 2 and Condition Class 3 burrows were observed along the gen-tie route. Suitable habitat occurs in much of the area west of SR-14.
Birds					
<i>Aquila chrysaetos</i>	golden eagle	BGEPA BCC	FP ^a	Species typically nests in canyons on cliffs and large trees in open habitats, especially hilly and mountainous regions. Forages for mammalian prey in grasslands, coastal sage scrub, chaparral, oak savannahs, open coniferous forest, and over open areas.	Moderate (winter foraging). Moderate potential to occur during winter and dispersal. Not observed during surveys. The nearest CNDDDB occurrence is from approximately 3.4 miles south of the gen-tie area, at Soledad Mountain, although the location is not known to have been occupied since 1969. The next occurrence is 7.6 miles north of the gen-tie area in the Tehachapi Mountains. Low (breeding season foraging). The site supports marginally suitable foraging habitat. Not expected to nest on the project site.
<i>Athene cunicularia</i>	burrowing owl	BCC	SSC ^a	This species occurs in open annual or perennial grasslands, scrublands, and agriculture, characterized by low-growing vegetation.	Present. Observed twice during desert tortoise surveys on the northern site in 2017. Focused surveys were not conducted. CNDDDB includes an occurrence approximately 4 miles southeast of the northern site. Suitable nesting and wintering habitat is present over much of the northern site; marginal habitat is present within the southern site; suitable habitat within the gen-tie area.

TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status	State Status	Habitat Requirements	Potential to Occur
<i>Buteo regalis</i>	ferruginous hawk	BCC	None ^a	Occurs in open, dry country, grasslands, open fields, agriculture. Occurs in California only during winter and migration.	Moderate (wintering). The nearest CNDDDB occurrence is from approximately 6.8 miles to the south-southwest of the western end of the gen-tie area; however, this species is underreported in CNDDDB. The site supports marginally suitable winter foraging habitat.
<i>Buteo swainsoni</i>	Swainson's hawk	BCC	ST ^a	Breeds in open grasslands with scattered trees, juniper-sage flats, shrublands, and agricultural areas; requires adjacent suitable foraging habitat such as grasslands, alfalfa or grain fields supporting rodent populations.	Present (migration). A single adult was observed in migration over the gen-tie area in April 2017. No nesting Swainson's hawks were observed in 2017. The site supports marginally suitable foraging habitat.
<i>Falco mexicanus</i>	prairie falcon	BCC	None ^a	Occurs in grassland, savannahs, rangeland, agriculture, desert scrub, alpine meadows. Nests on cliffs or bluffs.	Moderate (foraging). Moderate potential to forage during the nesting season. Not observed during surveys. CNDDDB does not provide specific locations for occurrences of this species, but it includes a non-specific location for the Soledad Mountain USGS quad from 1978, before current mining operations there. Suitable nesting habitat likely occurs at Soledad Mountain, approximately 3.4 miles south of the gen-tie area, but current mining operations may preclude nesting. Not expected to nest on the project site.
<i>Lanius ludovicianus</i>	loggerhead shrike	BCC	SSC ^a	Occurs in open habitats utilizing shrubs, trees, pots, fences, and low utility lines for perches, specifically prefers open foothill and valley woodlands with some canopy and foraging perches. Forages in edge habitats, and in particular prefers shrubs adjacent to grasslands.	Present. In 2013, a family group was observed along the western edge of the northern site, and this species was observed regularly in the site vicinity. An adult with juveniles was observed in the gen-tie area during Swainson's hawk surveys in 2017. Extensive suitable nesting habitat occurs in the vicinity of Joshua trees.
<i>Spinus (Carduelis) lawrencei</i>	Lawrence's goldfinch	BCC	None ^a	Occurs in valley foothill hardwood, valley foothill hardwood-conifer, desert riparian, palm oasis, pinyon-juniper and lower montane habitats.	Moderate. Moderate potential to occur, especially near existing development. Not observed during surveys; nesting and foraging habitat are marginal over most of the site.

TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status	State Status	Habitat Requirements	Potential to Occur
<i>Toxostoma lecontei</i>	LeConte's thrasher	BCC	SSC ^a	Occurs in open desert wash, creosote scrub, alkali desert scrub, and desert succulent scrub.	Present. Observed on the project site, in the gen-tie area, and various locations in the vicinity during Swainson's hawk surveys in 2013. Suitable habitat, including micro-habitats suitable for nesting, occur in areas with Joshua trees and desert scrub communities.
Mammals					
<i>Antrozous pallidus</i>	pallid bat	None	SSC ^a	Occurs in arid habitats, including grasslands, shrublands, woodlands and forests. For roosting, prefers rocky outcrops, cliffs and crevices with access to open habitats for foraging.	High. High potential for foraging but not expected to roost. Species was recorded during surveys of the nearby Soledad Mountain, and suitable foraging habitat occurs within the project site.
<i>Corynorhinus townsendii</i>	Townsend's big eared bat	None	SSC ^a	Species inhabits a wide variety of habitats including desert scrub. Most common in mesic habitats. Roosts in mines, limestone caves, hollow trees, or abandoned buildings. Extremely sensitive to roost disturbance.	High. High potential for foraging but not expected to roost. Species detected roosting in abandoned mine shafts within approximately 3.5 miles southwest of the northern site in the nearby Soledad Mountain, and suitable foraging habitat occurs within the project site.
<i>Euderma maculatum</i>	spotted bat	None	SSC ^a	Occurs in 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.	Low. Low potential to forage and not expected to roost. CNDDDB includes no occurrences in the area, but the project site is within the range of the species. Suitable habitat likely occurs nearby within Soledad Mountain and suitable foraging habitat is present throughout the project site.
<i>Perognathus inornatus alticola</i>	Tehachapi pocket mouse	None	SSC ^a	Occurs in arid annual grassland and desert shrub communities, but also taken in fallow grain field and in Russian thistle.	Low. Small mammal surveys were not conducted; however, the project site is outside the range of the species. Nearest CNDDDB occurrences are three between 1.8 and 2.2 miles in the Tehachapi foothills.
<i>Spermophilus (Xerospermophilus) mohavensis</i>	Mohave ground squirrel	None	ST ^a	Occurs in open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands restricted to Mojave desert.	Low. Not observed during surveys; numerous trapping surveys resulted in no Mohave ground squirrel captures. Survey data indicate that Mohave ground squirrels are either absent or occur in low numbers in the project site. The project area is on the western edge of the species' range.

TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status	State Status	Habitat Requirements	Potential to Occur
<i>Taxidea taxus</i>	American badger	None	SSC ^a	Typically, most abundant in drier open stages of shrub, forest, and herbaceous habitats with friable soils. Species requires open, uncultivated ground; preys on burrowing rodents.	High. Observed approximately 8.5 miles west during Swainson's hawk surveys in 2017. CNDDDB includes an occurrence approximately 6.2 miles north-northwest. Suitable habitat is abundant in the area.
<i>Vulpes arsipus</i>	<i>macrotis</i> desert kit fox	None	None*	Species found in arid climates. Prefers grasslands, open desert scrub such as shadscale scrub, creosote bush scrub, and occasionally agricultural farmland. Species nests in burrows.	May be Present. A natal den and an additional burrow with sign were observed in the southern site in spring 2017. Suitable habitat is present throughout.

Federal:

BGEPA = Bald and Golden Eagle Protection Act

BCC = USFWS Bird of Conservation Concern

FT = Federally threatened

State:

FP = California Fully Protected

ST = State threatened; Candidate = Candidate for State threatened

SSC = California Species of Special Concern

^a Species listed on the CDFW Special Animals List.

* Species protected as a fur-bearing mammal by CDFW.

SOURCE: Dudek, 2019.

Sensitive Natural Communities

The project site does not contain sensitive natural communities (CDFW, 2018c).

Critical Habitat

USFWS does not identify any critical habitats on or near the project site. The nearest critical habitat is for the federally-endangered, state-endangered, and California fully-protected California condor (*Gymnogyps californianus*), located approximately 20 miles to the west, and desert tortoise critical habitat is approximately 20 miles to the southeast of the project site.

Wildlife Movement Corridors

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. The project site does not lie within a recognized wildlife connectivity area as mapped by the California Essential Habitat Connectivity Project (Spencer et al., 2010). The closest linkage network is northeast of the site and connects landscape blocks of Edwards AFB and the southern Sierra Nevada. Therefore, the project site is located adjacent to, but outside of, an identified essential regional wildlife linkage. The project site is largely undeveloped with an open landscape and, thus, wildlife can move relatively freely throughout the area. In addition, wildlife can utilize dirt roads within the project site to move throughout the area. Constraints to wildlife movement include SR-14, Oak Creek Road, several other paved roads, an existing substation, wind turbines, the Southern Pacific Railroad, and scattered rural residential areas. While these features may constrain wildlife movement, the low traffic volume, along with light human presence, likely does not preclude wildlife from utilizing the project site and surrounding areas. Fencing along the boundary of Edwards AFB also provides a constraint south of the project site, although many species of wildlife may penetrate this barrier.

In the larger context, the project site lies on the western edge of the Antelope Valley, on lands that gradually slope downward from the northwest to the southeast. The topography of the project area is relatively flat as the project site is south of the Tehachapi Mountains, with the exception of scattered hills in the surrounding area up to approximately 200 feet in height. Movement of terrestrial animals is likely diffuse and spread throughout the entire area. While migratory birds, such as Swainson's hawks, overfly the Antelope Valley, there are no significant stopover sites in the vicinity of the project, as there are no riparian habitats or water bodies with abundant resources to attract concentrations of birds. The renewable energy projects in the vicinity of the project, as well as undeveloped land and rural residences, which are mainly native plant communities with scattered unpaved roads and residences, provide for largely unrestricted wildlife movements through natural or semi-natural habitats.

Surface Hydrology and Jurisdictional Waters

Jurisdictional waters include aquatic resources such as streams, creeks, lakes, riparian areas, wetlands, and certain aquatic vegetation communities, which are considered sensitive biological resources and can fall under the jurisdiction of federal and/or State regulatory agencies including the Army Corps of Engineers (USACE), CDFW, and/or Lahontan Regional Water Quality Control Board (RWQCB). The definitions of the extent of regulatory agency jurisdictions are described in Section 4.4.3, Regulatory Setting, below.

The project site is located east of the Tehachapi Mountains and south of Sugarloaf Mountain and is relatively flat, gradually sloping downward from the northwest to the southeast. Rogers Lake, a closed drainage basin, together with the adjacent smaller Rosamond and Buckthorn Lake, make up the largest water feature in the project site vicinity. Drainages within the project site originate from flows from the Tehachapi and Sugarloaf Mountains, road runoff, or sheet-flow, and either dissipate into the desert floor evaporating or infiltrating into the groundwater basin or continue to flow to Rogers Lake during larger storm events. The results of the jurisdictional delineation concluded there are non-wetland jurisdictional waters within the project site.

The USACE determined that all tributaries to Rogers Lake are not waters of the United States (File No. SPL-2013-00545-TS; File No. SPL-2011-01084-SLP). Drainages within the project site either dissipate into the desert floor evaporating or infiltrating into the groundwater basin or continue to flow to Rogers Lake during larger storm events. The Antelope Valley Watershed is considered a closed basin and functions as an isolated intrastate watershed system lacking the presence of a traditional navigable water. Therefore, based upon these previous determinations, all features within the project site were considered to be non-jurisdictional under the USACE. However, all water features occurring on the project site are waters of the State and fall under the jurisdictional authority of CDFW and RWQCB. Approximately 5.1 acres (34,332 linear feet) of waters of the State occur within the project site as ephemeral stream channels and swales.

4.4.3 Regulatory Setting

Federal

Endangered Species Act of 1973 (USC, Title 16, Sections 1531 through 1543)

The FESA and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. In addition, the FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA also provides a program for the conservation and recovery of threatened and endangered species as well as the conservation of designated critical habitat that USFWS determines is required for the survival and recovery of these listed species.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in CCR Title 50, Part 402. The opinion issued at the conclusion of consultation will include a statement authorizing “take” (i.e., to harass, harm, pursue, hunt, wound, kill, etc.) that may occur incidental to an otherwise legal activity.

Section 9 lists those actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of “harm” includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing

behavioral patterns related to breeding, feeding, or shelter. “Harass” is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at Code of Federal Regulation (CFR), Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in Section 3(5)(A) of the FESA: (1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special management consideration or protection; and (2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

Migratory Bird Treaty Act (USC, Title 16, Sections 703 through 711)

The MBTA, first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird” (U.S. Code Title 16, Section 703). The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

Bald and Golden Eagle Protection Act of 1940 (USC, Title 16, Section 668, enacted by 54 Stat. 250)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species and establishes civil penalties for violation of this act. Take of bald and golden eagles includes to “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

Federal Clean Water Act (USC, Title 33, Sections 1251 through 1376)

The federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters. Section 401 requires a project proponent for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. to obtain State

certification, thereby ensuring that the discharge will comply with provisions of the CWA. The RWQCBs each administer the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. USACE implementing regulations are found at CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the U.S. Environmental Protection Agency (USEPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

State

California Endangered Species Act (California Fish and Game Code Section 2050 et seq.)

The CESA establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no State agency consultation procedures under the CESA. For projects that would affect a listed species under both the CESA and the FESA, compliance with the FESA would satisfy the CESA if CDFW determines that the federal incidental take authorization is “consistent” with the CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species listed under the CESA only, the project proponent would have to apply for an Incidental Take Permit under Section 2081(b) to remain in compliance with the CESA.

Regional Water Quality Control Board

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB also regulate waters of the State under the Porter-Cologne Act Water Quality Control Act (Porter Cologne Act). The RWQCB require projects to avoid impacts to wetlands if feasible and requires that projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically require compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB also have jurisdiction over waters deemed ‘isolated’ or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the State and prospective dischargers are required obtain authorization through an Order of Waste Discharge or waiver thereof from the applicable RWQCB and comply with other requirements of Porter-Cologne Act. The project site is located within the jurisdiction of the Lahontan RWQCB.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the State fall under the jurisdiction of the appropriate RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards.

Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the CWA. The project site is under the jurisdiction of the Lahontan RWQCB and its associated basin plan.

California Fish and Game Code

Section 460. Under this section of the California Fish and Game Code (CFGF), desert kit fox may not be taken at any time.

Sections 1600 through 1616. Under these Sections of the CFGF, the project operator is required to notify CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a “stream” is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

Sections 2080 and 2081. Section 2080 of the CFGF states that “No person shall import into this State [California], export out of this State, or take, possess, purchase, or sell within this State, any species, or any part or product thereof, that the Commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act.” Pursuant to Section 2080.1 or 2081 of the code, CDFW may authorize individuals or public agencies to import, export, take, or possess State-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or memoranda of understanding if the take is incidental to an otherwise lawful activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project proponent ensures adequate funding to implement the measures required by CDFW, which makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

Sections 3503, 3503.5, 3513, and 3800. Under these Sections of the CFGF, the project proponent is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds of prey or their nests or eggs; the taking or possessing of any migratory nongame bird as designated in the MBTA unless authorized by rules or regulations approved by the Secretary of the Interior; the taking, possessing, or needlessly destroying of the nest or eggs of any bird; or the taking of any nongame bird pursuant to California Fish and Game Code Section 3800.

Sections 3511, 4700, 5050, and 5515. Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the CFGF. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species.

Sections 4000 through 4003. Under Section 4000 of the CFGC, it is unlawful to conduct activities that would result in the taking, possessing, or destroying of any fur-bearing mammals, including desert kit foxes, without prior authorization from the CDFW.

CEQA Guidelines, Section 15380

In addition to the protections provided by specific federal and state statutes, CEQA *Guidelines* Section 15380(b) provides that a species not listed on the federal or state list of protected species nonetheless may be considered rare or endangered for purposes of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the Section of the CFGC dealing with rare or endangered plants or animals. This Section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected and requires findings of significance if there would be substantial losses. Natural communities listed by CNDDDB as sensitive are considered by CDFW to be significant resources and fall under the CEQA *Guidelines* for addressing impacts. Local planning documents such as general plans often identify these resources as well.

Native Plant Protection Act (California Fish and Game Code Sections 1900 through 1913)

California's Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. The project proponent is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and Sections of CEQA that apply to rare or endangered plants.

California Desert Native Plants Act (California Food and Agricultural Code Sections 800071 through 80075)

The California Desert Native Plants Act affords protection to certain native desert plant species, including all species of the agave family (*Agavaceae*), all species of the genus *Prosopis*, all species of the genus *Cercidium*, and makes the harvest, transport, sale, or possession of these species unlawful unless a permit is first obtained.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation

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

Kern County General Plan

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

1.10. General Provisions, 1.10.5. Threatened and Endangered Species

Goal

Goal 1: Ensure that the County can accommodate anticipated future growth and development while a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

Policies

- Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and Federal laws.
- Policy 28: The County should work closely with State and Federal agencies to assure that discretionary projects avoid or minimize impacts on fish, wildlife, and botanical resources.
- Policy 29: The County will seek cooperative efforts with local, State, and Federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands. Policy 30. The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, State, and Federal programs concerning endangered species conservation issues.
- Policy 31: Under the provisions of CEQA, the County, as lead agency, will solicit comments from the CDFW and the USFWS when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.
- Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measures

- Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.
- Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.

Chapter 5. Energy Element

5.2. Importance of Energy to Kern County

Policy

Policy 8: The County should work closely with local, State, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.

5.4.5. Solar Energy Development

Policy

Policy 4: The County should encourage solar development in the desert and valley regions previously disturbed, and discourage development of energy projects in undisturbed land supporting State or federally protected plant and wildlife species.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The objective, policies, and implementation measure in the Mojave Specific Plan for biological resources applicable to the project is provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 4. Conservation Element

Objective 4.4 Maintain and promote the retention of natural settings and use of native or adaptable vegetation.

Policy 4.4.3 For development projects that are located outside the identified urbanized nonsensitive area (Figure 4-2) for biological resources, a biological survey shall be conducted. Alternatively, a project applicant may demonstrate urbanized, nonsensitive status through the identification of applicable studies.

Policy 4.4.4 Encourage the preservation of Joshua trees, Joshua tree woodlands, known wildflower displays or other biologically sensitive flora determined during biological surveys.

Chapter 10. Implementation

Measure C-6a Require a biological survey to be conducted in nonurbanized sensitive areas (not developed, not previously developed, or not previously mitigated) with potentially significant biological resources.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. There are no goals, policies, or implementation measures in the West Edwards Road Settlement Specific Plan that are applicable to biological resources. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detail and refined manner unique to a smaller area of the County. Since there are no applicable goals, policies, or implementation measures within the West Edwards Road Settlement Specific Plan, refer to the applicable policies, goals, and implementation measures of the Kern County General Plan above.

Kern County Zoning Ordinance

Chapter 19.81. Dark Skies Ordinance (Outdoor Lighting)

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

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

4.4.4 Impacts and Mitigation Measures

This section evaluates the impacts to biological resources that may occur during construction and operation of the proposed project. It describes the sensitive biological resources located on and adjacent to the project site that may be affected and identifies the thresholds used to determine whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, where applicable.

Methodology

The following impact analysis is based on existing and potential biological resources occurring within the project site and vicinity of the project identified through a review of relevant literature and the BRTR (Dudek, 2019). Biological resources evaluated include sensitive habitats, special-status plant and animal species, and potential for wildlife movement corridors. The potential for special-status species to occur on the project site is based on the results of database research, biological assessments, surveys conducted on

the project site and vicinity, presence of suitable habitat, and the proximity of the project site to previously recorded occurrences in the CNDDDB, CDFW, and USFWS data. Other sources of information used include aerial photographs, topographic maps, soil survey maps, geological maps, climatic data, previous biological studies, and project plans

Field Surveys

Reconnaissance and directed surveys for sensitive plants, animals, and other biological resources were conducted on the project site in spring and summer 2017, and spring and summer 2018. The impact analyses presented here address potential biological resources located on the project site based on results of field surveys detailed in the BRTR (provided in Appendix D of this EIR).

Thresholds of Significance

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

A project would have a significant adverse effect on biological resources if it:

- a. Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or the USFWS;
- b. Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or the USFWS;
- c. Has a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Project Impacts

Impact 4.4-1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

Overview

The proposed project has the potential to impact special-status plants and wildlife through the loss of habitat as well as direct and indirect impacts on species, such as mortality of individuals or interference with reproductive success. Potential impacts to special-status plants and wildlife from construction, operation and maintenance, and decommissioning are discussed below.

Construction

Special-Status Plants

One special-status plant species was identified at the project site: alkali mariposa lily. A total of eight alkali mariposa lilies were observed, with one individual observed in the northern portion of the project site and the remaining seven individuals observed in the southern portion of the project site. Direct impacts to the alkali mariposa lilies and their habitat may include mortality of individuals as a result of permanent removal or damage to root structures during the construction phase of the project through activities like clearing vegetation and removal of suitable habitat. Indirect impacts may include construction-generated dust and sedimentation into adjacent habitat supporting these plants that may affect photosynthetic uptake processes as a result of dust covering leaves or water uptake processes as a result of sedimentation around individual plants and their habitat. These indirect impacts can impact the success of individual plants. Impacts to alkali mariposa lily would be considered significant without mitigation.

While impacts to these special-status plant species are potentially significant, impacts would be reduced through the implementation of Mitigation Measures MM 4.4-1 through MM 4.4-5, which requires measures such as alkali mariposa lily avoidance, bulb transplantation plan, minimization measures, construction monitoring by a qualified biologist, implementation of an Environmental Awareness Training and Education Program, general avoidance and protective measures designed to avoid impacts to special-status wildlife during construction, operations and maintenance, and decommissioning activities, and preconstruction surveys for special-status species including special-status plants. With the implementation of Mitigation Measures MM 4.4-1 through MM 4.4-5, impacts would be reduced to a less-than-significant level.

Other special-status plants that have a low potential to occur include recurved larkspur, Barstow woolly sunflower, pale-yellow layia, sagebrush loeflingia, and Latimer's woodland gilia. Surveys for these species were conducted in 2017 and 2019 and the results were negative. While there is a low potential for them to occur, if they were to occur they would occur in very low numbers since none were observed during either survey. Additionally, these species are not state or federally listed. Due to these reasons, this impact is less than significant under CEQA.

While not special-status plant species, Joshua trees and two species of cactus, Wiggins' cholla and beavertail pricklypear are protected under the California Desert Native Plants Act and have been documented within the project site. These plants are protected by the CDNPA, which prohibits harvesting these native desert plants, or any parts thereof, except when a permit from the County Commissioner is obtained or a fee for removal obtained.

With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-5, impacts to special-status plant species would be less than significant.

Special-Status Wildlife

Special-status wildlife species either confirmed present or may be present on the project site include desert tortoise, burrowing owl, Swainson's hawk, loggerhead shrike, LeConte's thrasher, and desert kit fox. In addition, the pallid bat, Townsend's big-eared bat, and American badger have a high potential to occur at the project site. Golden eagle, ferruginous hawk, prairie falcon, and Lawrence's goldfinch have a moderate potential to occur at the project site. Suitable habitat for several migratory birds and raptors protected under the MBTA and the CFGC are also present. Construction of the project could result in the direct impacts of these special-status species if any are present. Individual discussions for each species are further discussed below.

Desert tortoise. No signs of desert tortoise were observed on the northern portion of the project site and desert tortoise are not expected to occur on the northern portion. Sign (scat) and confirmed desert tortoise burrows were observed within the southern portion of the project site; therefore, desert tortoise was determined to be present on the southern portion of the project site. However, no live individuals have been observed. Direct impacts could include death or injury to individuals, displacement of tortoises and loss of territory, disruption of breeding activities, crushing of burrows and viable eggs, and loss of suitable habitat. Common ravens, a notable predator of juvenile desert tortoises, are present within the project site and could injure or kill juvenile desert tortoises should they be present. Indirect impacts could also occur during construction if desert tortoises are present within 500 feet of the project site. These indirect impacts include construction-related noise and ground vibration deterring individuals from inhabiting or foraging in areas near the project site. Additional indirect impacts could occur from construction-related dust, sedimentation, and erosion along the site edges, which have the potential to alter offsite conditions. Noxious weed seeds could be spread during construction activities to offsite habitats that are occupied by tortoise during travel to and from the site or by wind. Non-native vegetation often offers little to no nutritional value to desert tortoises and could reduce their ability to find sufficient amounts of food, and increase risk of fires in the area. These direct and indirect impacts to desert tortoise would be considered significant without mitigation.

While impacts to desert tortoises are potentially significant, impacts would be reduced through the implementation of Mitigation Measures MM 4.4-2 through MM 4.4-7, which requires construction monitoring by a qualified biologist, implementation of an Environmental Awareness Training and Education Program, general avoidance and protective measures designed to avoid impacts to special-status wildlife during construction, operations and maintenance, and decommissioning activities, preconstruction surveys for special-status species including desert tortoise and establishment of a suitable buffer by a qualified biologist, desert tortoise clearance surveys and the development of a desert tortoise translocation plan, and development of a Raven Management Plan. Due to absence of live tortoise occurrence on the project site and its position at the periphery of the species' current range, and the quality of immediately surrounding habitats as well as the abundance of suitable habitat to the east of the project site where the largest primary population in the Mojave Desert is located, the loss of up to 1,035 acres of poor suitable

habitat is considered less than significant and mitigation is not required. With implementation of Mitigation Measures MM 4.4-2 through MM 4.4-7, impacts to desert tortoise would be less than significant.

Burrowing Owl. Burrowing owl was observed twice during desert tortoise surveys on the northern site in 2017. It is therefore assumed burrowing owl are present on the project site. Direct impacts to the occupied burrowing owl burrows and its habitat could occur as a result of project construction through the loss of available habitat and potential breeding burrows due to construction activities and increased human presence. Indirect impacts could also occur during construction if burrowing owls are nesting in adjacent offsite areas within 500 feet of the project site, and noise from construction activities harasses an owl to the point of abandoning an active nest site. Any adverse direct or indirect impacts to burrowing owls as a result of construction would be considered significant under CEQA without mitigation.

While impacts to burrowing owls are potentially significant, impacts would be reduced through the implementation of Mitigation Measures MM 4.4-2 through MM 4.4-5 and MM 4.4-8, which requires construction monitoring by a qualified biologist, implementation of an Environmental Awareness Training and Education Program, general avoidance and protective measures designed to avoid impacts to special-status wildlife during construction, operations and maintenance, and decommissioning activities, preconstruction surveys for special-status species including burrowing owl and establishment of a suitable buffer by a qualified biologist, and preconstruction burrowing owl surveys to identify any active or potential burrows that may require avoidance. Implementation of Mitigation Measures MM 4.4-2 through MM 4.4-5 and MM 4.4-8 would ensure that no nesting or foraging burrowing owls are impacted during construction or compensatory mitigation occurs; therefore, impacts to burrowing owl would be less than significant.

Swainson's Hawk. Swainson's hawks were observed within the project site on two occasions during the migratory period. It is therefore assumed Swainson's hawk is present on the project site. Swainson's hawks are not expected to nest on the project site based on the negative nest survey results in 2017, but could use the site for foraging. The project site contains desert scrub habitat but lacks agricultural lands which Swainson's hawk prefer. Direct impacts to Swainson's hawk could include reduction or loss of foraging habitat as a result of vegetation removal prior to grading and construction activities. However, while availability of potential foraging habitat would be reduced or lost during construction, this reduction would not be considered a significant impact because there is an abundance of suitable foraging habitat surrounding the project site. If present during construction activities, the project would have a low potential to directly impact this listed raptor species through mortality or injury because the species is highly mobile and could easily avoid construction, hence, direct impacts such as vehicular collisions would be considered less than significant. Indirect impacts would include collisions and/or electrocution from power lines. This indirect impact is a substantial source of mortality for this species and would be considered significant without mitigation.

While impacts to Swainson's hawk are potentially significant, impacts would be reduced through the implementation of Mitigation Measure MM 4.4-11, which requires power lines to be installed per Avian Power Line Interaction Committee (APLIC) standards. With implementation of Mitigation Measure MM 4.4-11, impacts to Swainson's hawk would be less than significant.

Loggerhead Shrike and LeConte's Thrasher. Both species were observed onsite during surveys in 2017 and are assumed to be present on the project site. Direct impacts could include death or injury to chicks or nest destruction, displacement of birds and loss of territory, and disruption of breeding activities. Adults of both species are mobile and not susceptible to direct impacts from construction activities. Additional, loss of habitat is not expected to be significant because of the abundance of suitable habitat surrounding the

project site. Indirect impacts from construction and decommissioning activities include disturbance to nesting individuals related to increase dust, noise, vibrations, and increase human presence. These direct and indirect impacts to these species would be considered significant without mitigation.

While impacts to the loggerhead shrike and LeConte's thrasher are potentially significant, impacts would be reduced through the implementation of Mitigation Measures MM 4.4-2 through MM 4.4-4 and MM 4.4-9, which requires construction monitoring by a qualified biologist, implementation of an Environmental Awareness Training and Education Program, general avoidance and protective measures designed to avoid impacts to special-status wildlife during construction, operations and maintenance, and decommissioning activities, and avian nesting surveys that would detect any nesting loggerhead shrike and LeConte's thrasher within the project vicinity. With implementation of Mitigation Measure MM 4.4-2 through MM 4.4-4 and MM 4.4-9, impacts to loggerhead shrike and LeConte's thrasher would be less than significant.

Desert Kit Fox. Desert kit fox natal den, burrow, and sign were observed within the project site; therefore, desert kit fox was determined to be present on the project site. Direct impacts to the species and its habitat could include being hit by vehicles on access roads or the loss of available habitat and potential burrows due to construction activities and increased human presence. Indirect impacts include noise, vibrations, increased human presence, and night-time lighting. These types of potential impacts to this species would be considered significant without mitigation. Although this species is protected under Title 14, California Code of Regulations, Section 460, it does not constitute as a special-status species; therefore, loss of suitable habitat for desert kit fox are not considered significant.

While impacts to the desert kit fox are potentially significant, impacts would be reduced through the implementation of Mitigation Measures MM 4.4-2 through MM 4.4-5 and MM 4.4-10, which requires construction monitoring by a qualified biologist, implementation of an Environmental Awareness Training and Education Program, general avoidance and protective measures designed to avoid impacts to special-status wildlife during construction, operations and maintenance, and decommissioning activities, preconstruction surveys for special-status species, including desert kit fox, and establishment of a suitable buffer by a qualified biologist, and the development of an avoidance or passive relocation program for desert kit fox. Additionally, Mitigation Measure MM 4.1-5 would require compliance with Kern County's Dark Skies Ordinance to minimize nighttime lighting in unincorporated areas of Kern County. With implementation of Mitigation Measures MM 4.4-2 through 4.4-5, MM 4.4-10, and MM 4.1-5, impacts to desert kit fox would be less than significant.

Pallid Bat and Townsend's Big-eared Bat. Pallid bat and Townsend's big-eared bat have a high potential to occur (foraging only). Direct impacts to both species include the reduction and loss of vegetation due to construction activities and permanent placement of solar facilities. However, it is likely that both species forage in the project area at low levels due to the low insect production in the desert communities at most times of the year. Additional suitable foraging habitat would remain surrounding the project site; therefore, there would be no significant impacts to pallid and Townsend's big-eared bat foraging habitat as a result of the project. Indirect impacts could also occur during construction if the bat species are deterred from foraging due to construction-related disturbances, including night-lighting and increase in human presence. However, these species are highly mobile and would be able to avoid any potential indirect impacts. The project site does not contain suitable roosting habitat to support the two bat species; therefore, no specific avoidance and minimization measures are proposed for these species. Both direct and indirect impacts to pallid bat and Townsend's big-eared bat would not be considered significant.

American Badger. This species was observed adjacent to the project site; therefore, this species has a high potential to forage on the project site. Direct impacts to American badger from project construction activities may include permanent and temporary loss of habitat. This species is locally scarce but within a wide range. Additional suitable habitat would remain surrounding the project site; therefore, there would be no significant impacts to American badger suitable habitat with development of the project. Indirect effects due to displacement of this species could also occur as a result of construction activities associated with the project. These types of potential impacts to this species would be considered significant without mitigation.

While impacts to the American badger are potentially significant, impacts would be reduced through the implementation of Mitigation Measures MM 4.4-2 through MM 4.4-5 and MM 4.4-10, which requires construction monitoring by a qualified biologist, implementation of an Environmental Awareness Training and Education Program, general avoidance and protective measures designed to avoid impacts to special-status wildlife during construction, operations and maintenance, and decommissioning activities, preconstruction surveys for special-status species including American badger and establishment of a suitable buffer by a qualified biologist, and the development of an avoidance or passive relocation program for American badger. With implementation of Mitigation Measures MM 4.4-2 through MM 4.4-5 and MM 4.4-10, impacts to American badger would be less than significant.

Golden Eagle. The nearest occurrence of the golden eagle was reported approximately 4 miles away from the project site; therefore, this species has a moderate potential to occur during winter and dispersal, but is not expected to nest. Golden eagles typically fly at altitudes much higher than project infrastructure while foraging or traveling, and collision with the project is considered extremely unlikely. Development of the project would result in loss of foraging habitat for the golden eagle. However, while availability of potential foraging habitat would be reduced or lost during construction, this reduction would not be considered a significant impact because there is an abundance of foraging habitat surrounding the project site. If present during construction activities, the project would have a low potential to directly impact this listed raptor species through mortality or injury because the species is highly mobile and could easily avoid construction, hence, direct impacts such as vehicular collisions would be considered less than significant. Indirect impacts would include collisions and/or electrocution from power lines. These indirect impacts are a substantial source of mortality for this species and would be considered significant without mitigation.

While impacts to the golden eagle are potentially significant, impacts to golden eagle would be reduced through the implementation of Mitigation Measure MM 4.4-11, which requires power lines to be installed per APLIC standards. With implementation of this Mitigation Measure MM 4.4-11, impacts to golden eagle would be less than significant.

Ferruginous Hawk and Prairie Falcon. Suitable foraging habitat for ferruginous hawk and prairie falcon includes open desert scrub communities present on and adjacent to the project site. The availability of suitable foraging habitat on the project site for these species would be reduced or lost as a result of vegetation and habitat removal from grading and constructing the proposed project. However, while availability of potential foraging habitat would be reduced or lost during construction, this reduction would not be a significant impact because there is an abundance of suitable foraging habitat surrounding the project site. Both species are not expected to nest on the project site. If present during construction activities, the project would have a low potential to directly impact these raptor species through mortality or injury because the species is highly mobile and could easily avoid construction, hence, direct impacts such as vehicular collisions would be considered less than significant. Indirect impacts include collisions and/or electrocution from power lines. This indirect impact is a substantial source of mortality for this species and would be considered significant without mitigation.

While impacts to the ferruginous hawk and prairie falcon are potentially significant, impacts to ferruginous hawk and prairie falcon would be reduced through the implementation of Mitigation Measure MM 4.4-11, which requires power lines to be installed per APLIC standards. With implementation of this Mitigation Measure MM 4.4-11, impacts to ferruginous hawk and prairie falcon would be less than significant.

Lawrence's Goldfinch. This species has a moderate potential to occur, especially near existing development. It is a USFWS Bird of Conservation Concern. In addition, this species is afforded protection as migratory species under the MBTA and during the nesting season as native birds protected under CFGC Section 3500. Direct impacts could include death of chicks or nest destruction and disruption of breeding activities. Adults of this species are mobile and not susceptible to direct impacts from construction activities. Additional, loss of habitat is not expected to be significant because the species prefers to forage in urban habitat which will not being impacted by the project site. Indirect impacts from construction and decommissioning activities include disturbance to nesting individuals related to increase dust, noise, vibrations, and increase human presence. These direct and indirect impacts to the nest and nesting individuals of this species would be considered significant without mitigation.

While impacts to Lawrence's goldfinch are potentially significant, impacts would be reduced through the implementation of Mitigation Measures MM 4.4-2 through MM 4.4-4 and MM 4.4-9, which requires construction monitoring by a qualified biologist, implementation of an Environmental Awareness Training and Education Program, general avoidance and protective measures designed to avoid impacts to special-status wildlife during construction, operations and maintenance, and decommissioning activities, and avian nesting surveys that would detect any nesting Lawrence's goldfinch within the project vicinity. With implementation of Mitigation Measures MM 4.4-2 through MM 4.4-4 and MM 4.4-9, impacts to Lawrence's goldfinch would be less than significant.

Operations and Maintenance

Direct impacts to special-status species are unlikely to result from project operation and maintenance activities because construction of the project would remove habitat for the special-status species on the project site, although wildlife movement through or around the project site (i.e., desert tortoise fencing) would still allow limited movement. Additionally, Mitigation Measures MM 4.4-3 and MM 4.4-4 require methods designed to reduce wildlife mortality and impacts, promote long-term project site suitability, and educate onsite personnel. However, maintenance activities within the project site could impact the special-status plant species if avoidance measures are not implemented. Project operation could result in indirect impacts to wildlife in proximity of the project if nighttime lighting is used. However, the potential indirect impact from nighttime lighting during operation and maintenance would be minimized through compliance with all development standards, the Kern County Zoning Ordinance, and the goals, policies, and implementation measures of the Kern County General Plan. The proposed project would be required to implement Mitigation Measure MM 4.1-5, which requires compliance with Kern County's Dark Skies Ordinance to minimize nighttime lighting in unincorporated areas of Kern County. Indirect impacts would also include collisions and/or electrocution from power lines which is a substantial source of mortality for raptor species and would be considered significant without mitigation.

Swainson's Hawk, Golden Eagle, Ferruginous Hawk, Prairie Falcon, and other raptors. Potential indirect impacts to raptor species from the operations and maintenance phase of the project may occur through the collisions and/or electrocution of power lines anticipated to be installed throughout the project site but especially along the proposed gen-tie lines.

Although raptor prey sources such as rodents and small birds are still likely to inhabit the area around solar panels on the project site, the solar panels may provide shielding, making them difficult to detect by raptors flying overhead. Raptors may use the utility structures surrounding the facilities as perch sites for hunting increasing the likelihood for collisions and/or electrocution. These impacts would be considered significant without mitigation.

While impacts to the aforementioned raptors are potentially significant, impacts would be reduced through the implementation of Mitigation Measures 4.4-11 and MM 4.4-12. Swainson's hawks are not expected to nest within the project site because they show nest site fidelity, and no nests were detected during protocol-level surveys. Therefore, they would only be present during migration and the project would not impact their behavior as they could migrate through adjacent areas. Golden eagles would only be present during winter and dispersing through the project site; therefore, the project would not impact their behavior as they could winter and disperse through adjacent areas. Ferruginous hawks would only be present during the wintering season as a migrant. Therefore, they would only be present during migration and the project would not impact their behavior as they could migrate through adjacent areas. Prairie falcon have the potential to forage within the project site, but because it was not detected during surveys, it is unlikely that this species forages exclusively within the project site. Therefore, with development of the project site, the majority of the foraging habitat for this species would remain, and impacts would be less than significant. Mitigation Measure MM 4.4-11 requires power lines to be installed per APLIC standards, reducing the likelihood of collision and/or electrocution from power lines. In order to determine if the operational phase of the project would result in a significant amount of avian mortality, Mitigation Measure MM 4.4-12 requires implementation of a monitoring program. The program would monitor avian mortality at the project site during operations and maintenance and provide quarterly reporting and recommendations to reduce the level of avian mortality. The project is unlikely to be large enough to result in raptor mortality impacts that exceeds background levels enough to have an adverse effect on the overall population. Impacts would be less than significant.

Migratory Birds. Direct and indirect impacts to avian species may occur during project operation and maintenance through individual collisions with project facilities and equipment including transmission wires, fencing, array structures, and heavy equipment. Such risks are commonplace with most human development activities. Factors that determine the risk of avian collisions with man-made structures include the size, height, and specific attributes of structures (guy wires and lighting/light attraction). Other factors include the siting in high-risk areas, frequency of inclement weather, type of development, and the species at potential risk. Such collisions can result in injury or mortality of avian species from electrocution, including in the case of power lines. Collisions with project facilities and equipment would be considered a potentially significant impact under CEQA without mitigation.

While impacts to migratory birds are potentially significant, impacts would be reduced through the implementation of Mitigation Measures MM 4.1-5 and MM 4.4-12. As discussed previously, solar panels have the potential to create a lake effect, potentially resulting in avian impacts from collisions, stranding, or other forms of distress. Mitigation Measure MM 4.1-5 would require all solar panels and hardware to be designed to minimize glare and spectral highlighting. In order to determine if the operational phase of the project is resulting in a significant amount of avian mortality, a monitoring program would be implemented, as described in Mitigation Measure MM 4.4-12. The program would monitor avian mortality at the project site during operations and maintenance and provide quarterly reporting and adaptive management recommendations to reduce the level of avian mortality to less than significant levels.

Decommissioning

Upon decommissioning of the proposed project after approximately 35 years, the project site would be disturbed, devoid of native habitat, and have compacted soil from years of vehicle traffic. The post-project condition of the project site as a result of project construction and operation would be different than pre-project conditions. If special-status species have recolonized the project site during operation, decommissioning could impact these species. Impacts to these species would be considered significant without mitigation.

While impacts during decommissioning are potentially significant, impacts would be reduced through implementation of Mitigation Measures MM 4.4-3, MM 4.4-4, MM 4.4-8, and MM 4.4-9, which require methods designed to reduce wildlife mortality and impacts, promote long-term project site suitability and educate onsite personnel. Implementation of these mitigation measures during the decommissioning period would reduce potentially significant impacts to special-status wildlife and plant species to less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.1-5 would be required (see Section 4.1, *Aesthetics*, for text of Mitigation Measure MM 4.1-5).

- MM 4.4-1:** Prior to the issuance of grading or building permits, the project proponent/operator shall conduct preconstruction surveys to map the location and quantify the number of Joshua trees, Wiggins' cholla, and beavertail pricklypear.
- a. The project proponent/operator shall pay the required fee to remove Wiggins' cholla, beavertail pricklypear, and Joshua tree in accordance with the California Desert Native Plants Act prior to construction activities.
 - b. All alkali mariposa lilies that cannot feasibly be avoided in final project design shall have bulbs collected prior to construction. Additionally, a transplantation plan for alkali mariposa lily will be submitted and approved by the County prior to ground disturbance and bulb collection. The plan will include the following:
 - i. Identify an area of occupied habitat either on site or off site to be preserved and where transplantation of bulbs will occur; and methods for preservation, restoration, enhancement, and/or translocation.
 - ii. Indicate a replacement ratio and success standard of 1:1 for impacted to individuals.
 - iii. Establish a monitoring program to ensure mitigation success.
 - iv. Create an adaptive management and remedial measures in the event that performance standards are not achieved.
 - v. Ensure financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity.
 - c. Temporary ground disturbance associated with the transmission lines shall be recontoured to natural grade (if the grade was modified during the temporary disturbance activity), and revegetated with an application of a native seed mix prior to or during seasonal rains to promote passive restoration of the area to pre-project

conditions. However, if invasive plant species were present, these species would not be restored. An area subjected to temporary ground disturbance means any area that is disturbed but will not be subjected to further disturbance as part of the project. This does not include areas already designated as urban/developed. Prior to seeding temporary ground disturbance areas, the qualified biologist will review the seeding palette to ensure that no seeding of invasive plant species, as identified in the most recent version of the California Invasive Plant Inventory for the region, will occur.

MM 4.4-2: Prior to the issuance of grading or building permits from the County, the project proponent/operator shall retain a qualified biologist(s) who meets the qualifications of an authorized biologist as defined by U.S. Fish and Wildlife Service (USFWS) to oversee compliance with protection measures for all listed and other special-status species that may be affected by the construction of the project. The following measures pertain to qualified biologist(s) on site:

- a. The qualified biologist(s) shall be on the project site during construction of perimeter fencing, clearing of vegetation, grading activities, and similar ground-disturbance activities that will be associated with the construction phase.
- b. The qualified biologist(s) shall have the right to halt all activities that are in violation of the special-status species mitigation measures, as well as any regulatory permits from the California Department of Fish and Wildlife and/or USFWS. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk.
- c. The qualified biologist(s) shall have in her/his possession a copy of all the compliance measures while work is being conducted on the project site.
- d. Prior to issuance of grading or building permits, contact information for the qualified biologist(s) shall be submitted to the Kern County Planning and Natural Resources Department.
- e. 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.

MM 4.4-3: Prior to the issuance of grading or building permits from the County, and for the duration of construction activities, and within a minimum of one-week initial ground disturbance, all construction workers shall attend an Environmental Awareness Training and Education Program that will be developed by a qualified biologist. Any personnel associated with construction that did not attend the initial training shall be trained by the authorized biologist or designee approved by the authorized biologist prior to working on the project site.

Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training and Education Program prior to starting work on the project and on an annual basis.

The Program will be developed and presented by the project qualified biologist(s) or designee approved by the qualified biologist(s) during construction. The Program shall include the components described below:

- a. Information on the life history of the alkali mariposa lily, desert tortoise, burrowing owl, Swainson's hawk, loggerhead shrike, LeConte's thrasher, nesting birds, and desert kit fox; as well as other wildlife, special-status plant species, and the California Department of Fish and Wildlife-regulated drainages that may be affected during construction activities. The program shall also discuss the legal protection status of each species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements.
- b. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education Program has been completed shall be kept on file at the construction site.
- c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education Program and signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department.
- d. A copy of the training transcript, training video, or informational binder for specific procedures shall be kept available for all personnel to review and be familiar with as necessary.
- e. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.
- f. The construction crews and contractor(s) shall be responsible for preventing unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits. Unauthorized impacts may result in project stoppage, and/or fines depending on the impact and consultation with the California Department of Fish and Wildlife and/or USFWS.

MM 4.4-4: During construction, operations and maintenance, and decommissioning, the project proponent/operator and/or contractor(s) shall implement the general avoidance and protective measures described below.

- a. Prior to conducting vegetation clearing or grading activities associated with construction or decommissioning, a qualified biologist or biological monitor that has been approved by the qualified biologist shall perform pre-construction visual surveys of the area immediately prior to conducting these activities to ensure that no special-status animals are present. The qualified biologist or biological monitor shall monitor all initial construction and decommissioning ground disturbance activities. A report of

those activities shall be submitted to the Kern County Planning and Natural Resources Department within 30 days of completion of activities.

- b. All proposed impact areas, including solar fields, generation-tie lines, staging areas, access routes, and disposal or temporary placement of spoils, shall be delineated with stakes and/or flagging prior to construction to avoid sensitive biological resources (i.e., special-status species, jurisdictional drainages, nesting birds, etc.) where possible. Construction-related activities outside of the impact zone shall be avoided.
- c. Access roads that are planned for use during construction 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 construction.
- d. The project proponent/operator shall minimize 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 demarcated and disturbance activities, vehicles, and equipment shall be confined to these areas.
- e. Spoils shall be stockpiled in disturbed areas that lack native vegetation. Best Management Practices (BMPs) shall be employed to prevent erosion in accordance with the project's approved Stormwater Pollution Prevention Plan (SWPPP) (see Section 4.7, *Geology and Soils*, for more details on SWPPP requirements). All detected erosion shall be remedied as described in the Erosion Control Plan of the SWPPP. 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.
- f. To prevent inadvertent entrapment of desert tortoises, desert kit foxes, American 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 placed a minimum of every 100 feet within the open trench. 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. 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 for their escape. If a listed species is trapped, the USFWS and/or CDFW, as appropriate for the species, and Kern County Planning and Natural Resources Department shall be contacted immediately.
- g. Desert tortoises, burrowing owls, mammals, and nesting birds may 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 the construction site for one or more overnight periods and without endcaps shall be thoroughly inspected by a qualified biologist for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until 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.

- h. No vehicle or equipment parked on the project site shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of wildlife. If present, the animal shall be left to move on its own.
- i. Vehicular traffic to and from the project site shall use existing routes of travel. Cross country vehicle and equipment use outside designated work areas shall be prohibited.
- j. A speed limit of 15 miles per hour shall be enforced within the limits of the proposed project. If night work occurs on the proposed project, the speed limit will be 10 miles per hour.
- k. Fueling of equipment shall take place within existing roads. No refueling within or adjacent to drainages (within 150 feet) shall be permitted. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary.
- l. The project proponent/operator shall submit a Maintenance, Trash Abatement, and Pest Management Program to the Kern County Planning and Natural Resources Department for review and approval. The program shall include, but not be limited to the following:
 - i. The project proponent/operator shall clear debris from the project area at least twice per year once the project is operational; this can be done in conjunction with regular panel washing and site maintenance activities.
 - ii. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.
 - iii. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.
 - iv. The project proponent/operator shall implement a regular trash removal and recycling program once per month on an ongoing basis during construction, including a recycling program. Barriers/locking systems to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.
- m. Workers shall be prohibited from bringing pets and firearms to the project site and from feeding wildlife.
- n. Intentional killing or collection of any plant or wildlife species shall be prohibited.
- o. No rodenticides shall be used on the project site.
- p. Perimeter fencing during operations and maintenance shall be made wildlife friendly, but can be built to exclude desert tortoise.

MM 4.4-5: To protect special status species from disturbance during construction, the actions described below shall occur.

- a. A qualified biologist (approved by the appropriate agency) shall monitor all initial ground-disturbance activities and remain on-call throughout construction in the event a special-status species wanders into the project site.
- b. Preconstruction surveys for special-status species shall be conducted within the project boundaries of the project site, as well as within a minimum of 500 feet from the project site to account for any inadvertent impacts to adjacent areas, by the qualified biologist within a maximum of 14 days of the start of any ground disturbing activities, such as geotechnical drilling vegetation clearing and/or grading. Methodology for preconstruction surveys shall be conducted as appropriate for special-status plants, desert tortoise, burrowing owl, Swainson's hawk, loggerhead shrike, Le Conte's thrasher, desert kit fox, and migratory birds, and shall follow U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife survey protocol guidelines, where appropriate. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site that will be disturbed. If evidence of occupation by a special-status species is observed, a suitable buffer shall be established by a qualified biologist that results in sufficient avoidance.

MM 4.4-6: Prior to construction in the southern portion of the site, the project proponent/operator shall conduct preconstruction desert tortoise surveys in accordance with the U.S. Fish and Wildlife Service protocol (2010). If no occupied burrows, fresh sign, or desert tortoise are discovered, no further mitigation is necessary. A survey report shall be submitted outlining the survey results.

A permanent tortoise proof exclusion fence shall be installed around portions of the project cleared of occupied burrows, fresh sign or desert tortoise. If an occupied burrow, fresh sign, or desert tortoise are observed during preconstruction surveys or incidentally prior to or during construction activities, within the construction area, the project proponent/operator shall redesign the project layout so that the location of the occupied burrow, fresh sign, or desert tortoise would be avoided by the project and construction. For occupied burrows, an additional 300-foot buffer from the burrow would be avoided by the project and construction. The permanent tortoise proof exclusion fence would be installed so that any occupied burrow (and its 300-foot buffer), fresh sign, or desert tortoise is outside of the exclusion fence to prevent tortoise from entering the site.

The permanent tortoise proof exclusion fence shall be installed around all construction and operation areas prior to the initiation of earth disturbing activities, in coordination with a qualified biologist. The fence shall be designed in such a manner to allow other wildlife to access through the permanent security fence and be constructed of 1-inch horizontal by 2-inch vertical mesh hardware cloth and extend 22-24 inches above ground and 12 inches below ground. Ultimate fence design must allow for desert kit fox pups to move in and out of the site, and species as large as coyotes access, but still protect the site from possible desert tortoise incursions (e.g., cinder block steps to a raised gap or opening in the fence). 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 construction and operations, and maintained when necessary by the project operator to ensure its integrity. Provisions shall be made for minimizing the potential for tortoise entry by placement of tortoise guards at the site entry. Common raven perching deterrents shall be installed as part of the fence construction.

A qualified biologist shall conduct a preconstruction survey for desert tortoise within the construction site, as well as before and after installation of desert tortoise exclusionary fencing (if required to be installed) and of project security fencing. A qualified 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.

A qualified biologist shall remain on site until all vegetation necessary for the construction of the project 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.

A qualified biologist shall remain on-call throughout fencing and grading activities in the event a desert tortoise wanders onto the project site.

- MM 4.4-7:** Prior to the issuance of grading or building permits, a Raven Management Plan shall be developed for the project site in consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. This plan shall include but is not limited to:
- a. Identification of all raven nests within the project area during construction;
 - b. Weekly inspection under all nests in the project area for evidence of raven predation on local wildlife (bones, carcasses, etc.), and, if evidence of predation is noted, submit a report to California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the Kern County Planning and Natural Resources Department within 5 calendar days;
 - c. Provisions for the management of trash and water that could attract common ravens during the construction and operation phases of the proposed project.
 - d. 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, 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.
- MM 4.4-8:** The project proponent/operator shall implement the following measures, based on the recently updated California Department of Fish and Wildlife (CDFW) 2012 Staff Report on Burrowing Owl Mitigation, to ensure potential impacts to burrowing owl resulting from

project implementation, operation and maintenance, and decommissioning activities will be avoided and minimized to less than significant level:

- a. A qualified wildlife biologist shall be on site during all initial grading and construction, pre-construction ground disturbing activities, and decommissioning activities. A qualified wildlife biologist (i.e., a wildlife biologist with the ability to identify the species and possessing previous burrowing owl survey and avoidance and minimization protection experience) shall conduct pre-construction surveys of all areas that will be permanently or temporary impacted, plus a 200-meter (approximately 656-foot) buffer, to locate active breeding or wintering burrowing owl burrows.
- b. The survey(s) shall occur no more than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading). The survey methodology shall be consistent with the methods outlined in the 2012 CDFW Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting and mapping any potential burrows with burrowing owl signs or presence of burrowing owls.
- c. As each burrow is investigated, project biologists shall also look for signs of American badger and desert kit fox. Surveys may also be conducted concurrently with desert tortoise preconstruction surveys. A biologist shall prepare a preconstruction survey report that shall be submitted to CDFW and the Kern County Planning and Natural Resources Department.
- d. A qualified biologist shall conduct an additional preconstruction survey of all impact areas plus an approximately 200-meter buffer no more than 24 hours prior to start or restart (as the case may be) of ground disturbing activities associated with construction or decommissioning activities as authorized by this approval to identify any additional burrowing owls or burrows necessitating avoidance, minimization, or mitigation measures.
- e. If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted within 200 meters of an occupied burrow during the breeding season (February 1–August 31), unless authorized by CDFW. During the non-breeding season (September 1–January 31), no ground-disturbing activities shall be permitted within 50 meters (165 feet) of an occupied burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.
- f. 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 E1 (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,
- g. 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. The Mitigation Land Management Plan shall include a requirement for the

permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation Land.

- h. If passive relocation is required, the project proponent shall implement the Mitigation Land Management Plan and permanently conserve in a conservation easement offsite habitat suitable for burrowing owl at ratio of 15 acres per passively relocated burrowing owl pair, not to exceed the size of the final project footprint. Land identified to mitigate for passive relocation of burrowing owl may be combined with other offsite mitigation requirements of the proposed project if the compensatory habitat is deemed suitable to support the species. The Passive Relocation Compensatory Mitigation habitat shall be approved by California Department of Fish and Wildlife. If the proposed project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits in lieu of placing offsite habitat into a conservation easement, if acceptable to California Department of Fish and Wildlife.

MM 4.4-9: To mitigate for potential impacts to nesting birds, special-status birds, and birds protected under the MBTA and CFGC during construction and decommissioning activities, the following measures shall be implemented as part of the approval for a grading or building permit.

- a. During the avian nesting season (February 1–August 31), a qualified biologist shall conduct a preconstruction avian nesting survey no more than 14 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 14 days prior to clearing or disturbance in specific areas of the site. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. At no time shall the qualified 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, including ground nesting species, such as horned lark and killdeer, nests in shrubs that could support nests, and suitable raptor nest sites such as nearby trees, windrows, 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.
- b. If construction is scheduled to occur during the non-nesting season (September 1–February 1), no preconstruction surveys or additional measures are required for non-listed avian species.
- c. If active nests are found, a 100-foot no-disturbance buffer shall be created around non-listed avian 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 CDFW). Any nest of a federally or state-listed bird species shall require consultation with the appropriate agency (USFWS or the CDFW) to determine the appropriate buffer distance surrounding the nest to provide adequate nest protection. These buffers shall remain in effect until a qualified biologist has determined that the birds have fledged or the 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.

- MM 4.4-10:** The project proponent/operator shall implement the following measures to ensure potential impacts to desert kit foxes and American badger resulting from project implementation and decommissioning activities will be avoided and minimized to less than significant levels:
- a. A qualified biologist shall be on site during all initial grading and construction, preconstruction ground disturbing activities, and decommissioning activities. A qualified biologist (i.e., a biologist with the ability to identify the species and possessing previous mammal survey and avoidance and minimization protection experience) shall conduct pre-construction surveys of all areas that will be permanently or temporary impacted, plus a 500-foot buffer, to locate unoccupied and occupied dens.
 - b. Unoccupied potential dens for desert kit fox or American badger shall have a minimum 30-foot avoidance buffer established.
 - c. An occupied den outside of the pup-rearing season shall be flagged and ground-disturbing activities avoided within 100 feet of the occupied den. An occupied den during the pup-rearing season, also known as a maternity den, should not be disturbed and a minimum 500-foot avoidance buffer established.
 - a. Desert kit fox pup-rearing season: February 1–August 1.
 - b. American badger pup-rearing season: March 15–July 31.
 - d. If outside the pup-rearing season, an occupied den cannot be avoided, passive relocation program can occur. The program shall consist of determining status of the den (confirming it's a non-maternity den through remote camera monitoring), excluding desert kit fox or American badger from occupied non-maternity den by installation of one-way doors at burrow entrances, monitoring of the den for 7 days to confirm usage has been discontinued, and excavation and collapse of the den. Passive relocation occurs by slowly excavating the burrow (either by hand or by mechanized equipment) under the direct supervision of a qualified biologist and removing no more than 4 inches of soil at a time. Passive relocation cannot occur during the pup-rearing season unless remote camera monitoring has documented the den as a non-maternity den. A written report documenting the passive relocation shall be provided to the Kern County Planning and Natural Resources Department within 30 days of relocation.
 - e. Dens or burrows that are determined to be inactive as determined by a qualified biologist within the project site, shall be collapsed by a qualified biologist to prevent occupation of the den between the time of the preconstruction survey and construction activities.
- MM 4.4-11:** The project proponent/operator shall install power lines in conformance with Avian Power Line Interaction Committee (APLIC) standards for electrocution-reducing techniques as outlined in suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), and for collision-reducing techniques as outlined in Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), or any superseding document issued by APLIC.
- MM 4.4-12:** During the operations and maintenance phase of the project, an Avian Mortality Monitoring Program shall be developed in coordination with CDFW and USFWS and

implemented to systematically and periodically determine the extent of mortality occurring due to collisions with solar arrays. The measures listed below apply to the program:

- a. The Avian Mortality Monitoring Program shall be developed following the Mortality Monitoring Design for Utility-Scale Solar Power Facilities and include methods to achieve Objective 1 (monitoring to estimate total bird and bat mortality). Methods include using a trained and skilled team of authorized biologists to systematically sample the project site by walking transects through the solar arrays scanning for deceased birds.
- b. Data shall be collected on any encountered deceased wildlife species including species, condition of the carcass, approximate age, presence of feathers, etc.
- c. Additionally, maintenance personnel working on the project site that encounter injured or deceased birds (or any other wildlife) should be trained to collect data and photograph the encountered species.
- d. Mortality monitoring shall be conducted for a minimum 1-year period following the commencement of the operations and maintenance phase of the project. Quarterly reporting of results shall be prepared and provided to state and federal agencies, if requested.
- e. Appropriate performance standards for mitigation of impacts to any species regulated by the Bald and Golden Eagle Protection Act, Endangered Species Act, and California Endangered Species Act exist through required consultation with USFWS and CDFW under their respective regulatory and permitting frameworks. If, after 2 years of mortality monitoring, project impacts to any other avian species caused by the project are shown to result in a substantial, long-term reduction in the demographic viability of the population of the species in question, then adaptive management must be implemented to reduce impacts to below this threshold. Adaptive management measures may include but not be limited to passive avian diverter installations, the use of sound, light or other means to discourage site use consistent with legal requirements, on site habitat management or control measures consistent with applicable legal requirements, or modification to support structures to exclude nesting birds.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-5 and MM 4.4-1 through MM 4.4-12, impacts would be less than significant.

Impact 4.4-2: The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

There are no sensitive natural communities per CDFW (CDFW, 2018c) in the project site. Therefore, no impacts to sensitive natural communities would result from implementation of the proposed project. Although there are no wetlands or waters of the U.S. delineated on the project site, approximately 5.1 acres

of CDFW- and RWQCB-jurisdictional areas are present on the project site; specifically, there are 2.2 acres in the northern and southern sites and 2.7 acres in the gen-tie area. Ground disturbing activities, such as pole placement, road maintenance, laydown/assembly areas, and string pulling sites, could impact up to 2.9 acres of CDFW- and RWQCB-jurisdictional areas. Additional temporary direct impacts to these CDFW- and RWQCB-jurisdictional areas could result from unintentional clearing, trampling, or grading outside of the proposed impact area during construction. Indirect impacts could include generation of fugitive dust, changes in hydrology resulting from construction, sedimentation and erosion, the release of chemical pollutants, and adverse effects of invasive plant species. These potential short-term or temporary direct impacts to CDFW- and RWQCB-jurisdictional areas are considered significant without mitigation.

If complete avoidance is not feasible, impacts to jurisdictional areas would be considered significant but mitigatable through implementation of Mitigation Measures MM 4.4-14, a report identifying all ephemeral drainages and how they would be avoided during the life of the project, and MM 4.4-14, development of compensatory mitigation if avoidance is not feasible. With the implementation of Mitigation Measures MM 4.4-13 and MM 4.4-14, impacts to CDFW- and RWQCB-jurisdictional areas would be less than significant.

Mitigation Measures

MM 4.4-13: Prior to issuance of any grading or building permit, the project proponent/operator shall submit a report detailing how all identified ephemeral drainages are avoided and will be continually complied with during the life of the project. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board (RWQCB) and the County. The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:

- a. Potential jurisdictional features (ephemeral drainages) identified in the jurisdictional delineation report shall be avoided. This may be shown in plan form.
- b. Any material/spoils generated from project activities shall be located away from jurisdictional areas or special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.
- c. Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from the top of bank.
- d. Any spillage of material will be stopped if it can be done safely. The contaminated area will be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative will be notified.

MM 4.4-14: If potential jurisdictional features cannot be avoided, the project proponent/operator shall be subject to provisions as identified below:

- a. If avoidance is not practical, prior to ground disturbance activities that could impact these aquatic features, the project proponent/operator shall file a complete Report of Waste Discharge with the RWQCB to obtain Waste Discharge Requirements and shall also consult with CDFW on the need for a streambed alteration agreement. Copies of the final report shall be submitted to the County.

- b. Based on consultation with RWQCB and CDFW, if permits are required for the project site, appropriate permits shall be obtained prior to disturbance of jurisdictional resources.
- c. Compensatory mitigation for impacts to unvegetated streambeds/washes shall be identified 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.
- d. The project proponent/operator 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 County.
- e. A Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared that outlines the compensatory mitigation in coordination with the RWQCB and CDFW.
 - i. If onsite mitigation is proposed, the HMMP shall identify those portions of the site, such as relocated drainage routes, that contain suitable characteristics (e.g., hydrology) for restoration. Determination of mitigation adequacy shall be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity (such as upstream or downstream of the site).
 - ii. The HMMP shall include remedial measures in the event that performance criteria are not met.
 - iii. If mitigation is implemented offsite, mitigation lands shall be comprised of similar or higher quality and preferably located in Kern County. Offsite land shall be preserved through a deed restriction or conservation easement and the HMMP shall identify an approach for funding assurance for the long-term management of the conserved land. Alternatively, the applicant may purchase credits from an approved mitigation bank.
 - iv. Copies of any coordination, permits, etc., with RWQCB and CDFW shall be provided to the County.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-13 and MM 4.4-14, impacts would be less than significant.

Impact 4.4-3: The project would have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Isolated waters within the Lahontan Region, including those on the project site, are not considered “waters of the United States” and, therefore, are not be subject to regulation under the federal Clean Water Act (CWA). In addition, no areas were identified on the project site that exhibit characteristics of wetlands as defined by USACE. Therefore, the proposed project would have no impact on federally protected wetlands.

Mitigation Measures

No mitigation would be required.

Level of Significance

No impact would occur.

Impact 4.4-4: The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

There are no perennial water features on the project site and, therefore, no potential corridors for aquatic species. In addition, no wildlife nursery sites have been identified on or in the vicinity of the project site. The closest linkage network is northeast of the project site and connects landscape blocks of Edwards Air Force Base and the southern Sierra Nevada. Therefore, the project site is located adjacent to, but outside of, an identified essential regional wildlife linkage. Construction could have direct and indirect impacts on wildlife movement within the project site, such as deterring wildlife from the construction area due to increased human presence, loud noises, and physical disruptions of habitat. Although the project would introduce structures to the project site that would physically impede wildlife movement in certain areas and directions, potential long-term direct and indirect impacts to wildlife movement corridors are not likely to be significant because abundance adjacent lands would remain available for wildlife movement after project development, including desert tortoise. All access roads associated with the gen-tie would result in more vehicle use; however, wildlife would be able to pass across these roads freely, since traffic would still be sparse. Fencing would allow wildlife to move through the site. Therefore, development of the project would not restrict local or regional wildlife movement. Therefore, the proposed project is not expected to adversely impact wildlife movement and impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.4-5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

As currently designed, the proposed project is considered consistent with the Land Use, Open Space, and Conservation Element of the Kern County General Plan. The project would implement mitigation measures to reduce potential project-related impacts to sensitive biological resources including special-status species and jurisdictional features. While the California Desert Native Plants Act is a state act, the Kern County administers the permit program for removal of the species covered in the act. The applicant would pay the required fee to remove Wiggins' cholla, beavertail pricklypear, and Joshua tree as stated in Mitigation

Measure MM 4.4-1. Additional, temporary ground disturbance would be reseed as stated in Mitigation Measure MM 4.4-1. With the implementation of Mitigation Measures MM 4.1-1 through MM 4.1-14, impacts to any local policies or ordinances would be less than significant.

The project is also within the Mojave Specific Plan. The Mojave Specific Plan encourages the preservation of Joshua trees, Joshua tree woodlands, wildflower displays, or other biologically sensitive flora. There are no Joshua tree woodlands in the study area and, thus, no impacts to Joshua tree woodlands would result from implementation of the proposed project. Additional, temporary ground disturbance would be reseed as stated in Mitigation Measure MM 4.4-1. Therefore, the project would have no impact to any local policies or ordinances.

Mitigation Measures

Implementation of Mitigation Measures MM 4.4-1 through MM 4.1-14 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-1 through MM 4.1-14, impacts would be less than significant.

Impact 4.4-6: The project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The project site is located within the boundaries of the Desert Renewable Energy Conservation Plan, but the plan only applies to BLM lands. The project site is not located on BLM lands, or any other local, regional, or state conservation planning areas; therefore, the proposed project would have no impact.

Mitigation Measures

No mitigation would be required.

Level of Significance

No impact would occur.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts for a project would be significant if the incremental effects of the individual project are considerable when combined with the effects of past projects, other current projects, and probable future projects. As described above, the project-specific impacts would be less than significant with implementation of Mitigation Measures MM 4.1-5 and MM 4.4-1 through MM 4.4-14.

As large-scale energy projects and urbanization pressures increase within Kern County, impacts to biological resources within the region are expanding on a cumulative level. As described in Chapter 3, *Project Description*, of this EIR, approximately 100 projects, including other utility-scale energy production facilities, are presently underway or proposed within Kern County and Los Angeles County. The geographic scope for analysis of project-related cumulative impacts on biological resources includes

the western portion of the Antelope Valley, generally bounded by the foothills of the San Gabriel Mountains to the south, the foothills of the Tehachapi Mountains to the north and west, and Edwards Air Force Base to the east. In general, bioregions are defined through physical and environmental features, including watershed boundaries and soil and terrain characteristics. Areas to the north and west of the Tehachapi Mountains, and to the south of the San Gabriel Mountains, are within a different bioregion and are separated from the project site by the natural geography that these ranges present. SR-14, at the eastern end of the Western Antelope Valley, also acts as a barrier to wildlife movement (Penrod et al. 2012).

As described above, there are a number of special-status species that currently utilize the project site and surrounding vicinity. Implementation of the project in addition to the other projects underway or proposed within Kern County would impact transient wildlife species, including burrowing owls, desert tortoise, raptors, American badger, and desert kit foxes. The project site contains habitat that support insects, rodents, and small birds that provide a prey base for raptors and terrestrial wildlife. In addition, based on the literature review and database search completed for the project, the region is known to support a diversity of special-status species, most of which are expected to utilize the project site on a transient basis, if at all.

Given the number of present and reasonably foreseeable future development projects in the Antelope Valley, the proposed project, when combined with other projects, would have an incremental contribution to cumulative loss of foraging and nesting habitat for special-status species. Implementation of Mitigation Measures would reduce impacts to biological resources to less-than-significant levels on the project-level scale. However, the proposed project, when combined with other related development projects proposed throughout the County, the cumulative impact would be significant and unavoidable.

In addition, common raven numbers have grown substantially in the past few decades in the western Mojave Desert. Ravens are predators of the desert tortoise and burrowing owl, and compete with, as well as prey on, many special-status raptors and birds. Raven numbers are such that they pose a serious threat to many desert species. Additionally, the common raven population growth is directly attributed to human development and the subsidies it creates that support this adaptable species. When considered within the cumulative context of related projects as described above, the project's contribution to maintaining artificially high common raven populations when combined with other related projects, is potentially significant. However, the contribution of the project with mitigation incorporated as described in Mitigation Measure MM 4.4-7, would not be cumulatively considerable because project impacts to special-status wildlife would be reduced.

The residual effects on migratory birds of the project were determined to be less than significant. This cumulative analysis analyzes the potential for these incremental impacts of the project to combine with other past, present, and reasonably foreseeable projects to cause or contribute to a significant cumulative effects within the Central Valley portion of the Pacific Flyway for the duration of the project. Identified cumulative projects that involve the installation of PV panels have the potential to cause impacts to migratory birds associated with collisions. Further, as take authorization for migratory bird species is not available. Therefore, the proposed project, in combination with all identified cumulative projects, would result in a cumulatively significant impact on migratory birds that may remain significant and unavoidable after implementation of mitigation.

Mitigation Measures

Implementation of Mitigation Measures MM 4.1-5 (see Section 4.1, *Aesthetics*, for text of Mitigation Measure MM 4.1-5), and MM 4.4-1 through MM 4.4-14 would be required.

Level of Significance after Mitigation

Despite implementation of the above mitigation, cumulative impacts would be significant and unavoidable to wildlife species, including desert tortoise, burrowing owl, raptors, desert kit fox, and migratory birds known to occur or with potential to occur on the project site.

4.5.1 Introduction

This section of the EIR provides contextual background information on cultural resources in the project site, including the site's prehistoric, ethnographic, and historical settings of the region. This section also summarizes the results of a cultural resources assessment, including background research, cultural resources survey of the project site, and significance evaluation of identified resources, as well the project's potential impacts on tribal cultural resources, are addressed in Section 4.16, *Tribal Cultural Resources*.

This section is based on two cultural resources technical report prepared by Dudek and Native American consultation conducted by the County for purposes of compliance with CEQA requirements prompted by Assembly Bill (AB) 52 and Senate Bill (SB) 18. The two cultural technical reports, one titled *Cultural Resources Inventory and Evaluation for the Sanborn Solar Project* (Dudek, 2019), located in Appendix E1 of this EIR, details the results of a cultural resources records search, field survey, and resource evaluations for the project site's solar fields. The other report, titled *Cultural Resources Inventory and Evaluation for the Gen-Tie Routes for Edwards Air Force Base (AFB) Solar Project* (Dudek, 2018), located in Appendix E2 of this EIR, was prepared for a separate project but includes the results of a cultural resources field survey and resource evaluations for the gen-tie alignments. These two reports are provided in Appendix E of this EIR and were conducted in compliance with Section 5024.1 of the California Public Resources Code (PRC) and CEQA to identify archaeological, historic built architectural, and other cultural resources in the project site. Due to the confidential nature of the location of cultural resources, information regarding locations of cultural resources has been removed from the reports and is not included in the appendix.

Cultural Resource Terminology

For the purposes of CEQA, "cultural resources" generally refer to prehistoric and historical archaeological sites, isolates, and the built environment. Cultural resources can also include areas determined to be important to Native Americans. Below are definitions of key cultural resources terms used in this section.

- *Alluvium*: a fine-grained fertile soil consisting of mud, silt, and sand deposited by flowing water on flood plains, in river beds, and in estuaries.
- *Archaeological site*: A site is defined as the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these remains. Archaeological remains usually take the form of artifacts (e.g., fragments of tools, vestiges of utilitarian, or nonutilitarian objects), features (e.g., remnants of walls, cooking hearths, or midden deposits), and ecological evidence (e.g., pollen remaining from plants that were in the area when the activities occurred). Prehistoric archaeological sites generally represent the material remains of Native American groups and their activities dating to the period before European contact. In some cases, prehistoric sites may contain evidence of trade contact with Europeans. Ethnohistoric archaeological sites are defined as Native American settlements occupied after the arrival of European settlers in California. Historic archaeological sites reflect activities during the Historic period.
- *Artifact*: An object that has been made, modified, or used by a human being.

- *Cultural resource*: Cultural resources are expressions of human culture and history in the physical environment, and may include archaeological sites, buildings, structures, objects, districts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains, but also may include areas where significant human events occurred, even though evidence of the events no longer remains. Cultural resources also include places that are considered to be of traditional cultural or religious importance to social or cultural groups.
- *Ethnographic*: Relating to the study of human cultures. “Ethnographic resources” represent the heritage resource of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.
- *Historic period*: The period that begins with the arrival of the first nonnative population and thus varies by area. In 1772, Commander Don Pedro Fages was the first European to enter Kern County, initiating the historic period in the project study area.
- *Historical resource*: This term is used for the purposes of CEQA and is defined in the CEQA Guidelines (Section 15064.5) as: (1) a resource listed in, or determined to be eligible for listing in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency’s determination is supported by substantial evidence in light of the whole record.
- *Holocene*: Of, denoting, or formed in the second and most recent epoch of the Quaternary period, which began 10,000 years ago at the end of the Pleistocene.
- *Isolate*: An isolated artifact or small group of artifacts that appear to reflect a single event or activity. Because isolates may lack identifiable context, and may not have the potential to add important information about a region, culture, or person, they are generally not considered under CEQA to be historical or unique archaeological resources (PRC Section 21083.2 and CEQA Guidelines Section 15064.5).
- *Lithic*: Of or pertaining to stone. Specifically, in archaeology lithic artifacts are chipped or flaked stone tools, and the stone debris resulting from their manufacture.
- *Pleistocene (Ice Age)*: An epoch in the Quaternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth’s land.
- *Prehistoric period*: The era prior to 1772. The later part of the prehistoric period is also referred to as the protohistoric period in some areas, which marks a transitional period during which native populations began to be influenced by European presence resulting in gradual changes to their lifeways.
- *Quaternary age*: The most recent of the three periods of the Cenozoic Era in the geologic time scale of the ICS. It follows the Tertiary Period, spanning 2.588 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: the Pleistocene and the Holocene Epochs.
- *Stratigraphy*: The natural and cultural layers of soil that make up an archaeological deposit, and the order in which they were deposited relative to other layers.

- *Tribal cultural resource*: These are defined in Assembly Bill 52 (AB 52) as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR) or included in a local register of historical resources (PRC § 21074(a)(1)).
- *Unique archaeological resource*: This term is used for the purposes of CEQA and is defined in PRC Section 21083.2(g) as an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it either contains information needed to answer important scientific research questions and that there is demonstrable public interest in that information; has a special and particular quality such as being the oldest of its type or the best available example of its type; or, is directly associated with a scientifically recognized important prehistoric or historic event or person.

4.5.2 Environmental Setting

The project site generally lies within the Western Mojave Desert, specifically the Antelope Valley. The Antelope Valley occurs within the Mojave Desert geomorphic province (CGS, 2002). The Mojave Desert province is characterized primarily by a broad interior region of isolated mountain ranges separated by expanses of desert plains. The Mojave Desert province is wedged between the Garlock Fault and the San Andreas Fault, which have uplifted the surrounding mountains relatively rapidly, isolating the Mojave Desert from the Pacific Coast and creating the interior drainage basins of the western Mojave Desert, such as the Antelope Valley. The west end of the Antelope Valley is defined by the Tehachapi and San Gabriel Mountains, forming the v-shaped basin of the western Mojave Desert.

The Antelope Valley floor is mantled in thick deposits of Quaternary alluvial and lacustral (lakebed) sediments that have filled the West Antelope, East Antelope and Kramer structural basins. The alluvial sediments are subdivided into two units: older (Pleistocene) Quaternary sediments, and younger (Holocene) alluvial surface deposits. These alluvial sediments are derived from nearby granitic mountains and have been deposited on the valley floor over the course of thousands of years.

Paleoenvironment

During the late Pleistocene age, fossil evidence suggests that the Antelope Valley was inhabited by numerous large mammalian species including sloths, horses, bears, mammoth, bison, camels, as well as prong-horned antelope. Large carnivorous species included saber-toothed cats, wolves, mountain lions, desert coyotes and foxes, while smaller animals included rodents, rabbits, squirrels and a multitude of birds. Studies of pollen and pack rat middens suggest that desert vegetation began replacing the low-elevation woodlands between 12,000 and 8000 years ago. Evidence suggests that the plant and animal communities that exist within the Antelope Valley today did not become established until after 4,300 years ago (Price et al., 2008).

Prehistoric Setting

The prehistory of the Mojave Desert is generally described in terms of cultural “complexes.” A complex is a specific archaeological manifestation of a general mode of life, characterized by technology, artifact types, economic systems, trade, burial practices, and other aspects of culture. Complexes are typically associated with particular chronological periods. The prehistory of the Mojave is generally divided into the following

time-periods/complexes: Paleo-Indian, Lake Mojave Complex, Pinto Complex, Gypsum Complex, Rose Springs Complex, and Late Prehistoric.

Paleo-Indian (10,000-8000 B.C.)

The Paleo-Indian period is represented in the Mojave primarily by large, fluted Clovis projectile points. This limited evidence suggests that early human occupants of the Mojave probably lived in small, mobile groups in temporary camps in the vicinity of permanent water sources (Sutton et al., 2007). In the vicinity of the project site, a fragment of a fluted Clovis point was recorded on the southern slopes of the Tehachapi Mountains, and recent excavations at Rosamond Lake in the Antelope Valley to the south have documented a terminal Pleistocene/Early Holocene occupation. In addition, the earliest occupation of CA-KER-2821/H, also known as the Bean Springs complex, an extensive archaeological site near Willow Springs, has been radiocarbon dated to 9020-9430 RCYBP (radiocarbon years before present) (Way, 2009).

Lake Mojave Complex (8000-6000 B.C.)

In terms of material culture, the Lake Mojave Complex is typified by stone tools such as Lake Mojave and Silver Lake projectile points, bifaces, steep-edged unifaces, crescents, and some ground stone implements (Sutton et al., 2007). Lake Mojave groups were organized in relatively small, mobile groups and practiced a forager-like subsistence strategy. Some trade with coastal groups was practiced, as evidenced by the presence of shell beads. Lake Mojave sites have been found primarily around Fort Irwin, Lake Mojave, China Lake, Rosamond Lake, and Twentynine Palms.

The Pinto Complex (6000 to 3000 B.C.)

Archaeological deposits dating from the Pinto Complex suggest that Pinto settlement patterns consisted of seasonal occupation by small, semi-sedentary groups that were dependent upon a combination of big and small-game hunting and collection strategies, which could include the exploitation of stream or water resources. Typically, sites of this period, which are far more geographically widespread than the Lake Mojave complex sites, are found along lakeshores and streams or springs, some of which are now dry. Material culture representative of this period in California prehistory include roughly formed projectile points, “heavy-keeled” scrapers, choppers, and a greater prevalence of flat millingstones and manos, indicating a more intensive use and processing of plant resources (Warren, 1984; Sutton et al., 2007). At the end of the middle Holocene, around 3000 B.C., environmental conditions became much drier and hotter, and few sites in the Mojave date to the period between 3000 and 2000 B.C., suggesting that the area’s population may have decreased during this period of unfavorable climate (Sutton et al., 2007). A number of Pinto sites have been recorded in the Antelope Valley, including at least six at Edwards Air Force Base (Price et al., 2008).

Gypsum Complex (c. 2000 B.C. to A.D. 200)

Many archaeological sites of this period are small and surficial, probably of a temporary nature. It is during this time, however, that more archaeological evidence suggestive of inter-tribal trade appears, particularly between the desert and the coast. A site at Lovejoy Springs (CA-LAN-192), which has a prominent Gypsum component, a group inhumation with at least nine individuals was uncovered, including a child buried with more than 3,000 *Olivella* shell beads from the southern Californian coast (Price et al., 2008). The artifact

assemblage associated with this period also includes an increased number of millingstones and manos, and it is believed that it was during this period that the pestle and mortar were introduced. These technological developments may point to the increased consumption of seeds and mesquite. Other artifacts associated with the Gypsum Period include Humboldt Concave Base, Gypsum Cave, Elko Eared, and Elko Corner-notched projectile points (Warren, 1984).

Rose Springs Complex (c. A.D. 200 to 1200)

The general cultural pattern for this period is a continuation of that of the preceding Gypsum Period. Rose Springs archaeological sites are more numerous than sites dating to previous periods and contain more well-developed middens, indicating an increase in population and a more permanent settlement pattern (Sutton et al., 2007). In addition, the archaeological record attests to established trade routes between desert and coastal populations by way of shell beads and steatite, as well as an introduction of Anasazi influence from the eastern Great Plains as evidenced by the appearance of turquoise and pottery. Material culture related to this complex includes obsidian artifacts, Rose Spring and Eastgate projectile points, millingstones, manos, mortars and pestles, slate pendants, and incised stones (Warren, 1984). These projectile points, which are smaller than those in preceding periods, are thought to reflect the adoption of the bow and arrow.

The prevalent use of obsidian is a defining feature of the Rose Springs period. Obsidian from the Coso volcanic field, 70 miles north of Mojave, was imported in near-finished form for use in making lithic tools (Price et al., 2008). The importing of obsidian seems to have dropped sharply at the end of the Rose Springs period, possibly associated with the Medieval Climatic Anomaly, a period of climate change between A.D. 800 to 1350, and the concurrent migration of Numic-speaking populations out of southeastern California and into the Great Basin.

Several periods of drought affected the Mojave in the Rose Springs period, associated with the Medieval Climatic Anomaly, and subsequent Late Prehistoric Period. Drops in the lake levels at Mono Lake attest to dry periods in A.D. 900-1100 and A.D. 1200-1350 (Price et al., 2008).

Several major Rose Springs villages or site complexes exist in the vicinity of the project site. A complex of 15 sites exists near Rosamond Lake, many of which are characterized solely by evidence of lithic reduction. Some of these sites have been dated to the Rose Springs Complex (Gardner, 2009). A number of sites have been identified along the shores of Koehn Lake, including one site that retains evidence of a pit-house (Sutton, 1996).

The Late Prehistoric Period (A.D. 1200 to European Contact)

Following periods of drought during the Rose Springs Period, wetter conditions returned between A.D. 1350 and 1600, associated with a climatic event known as the Little Ice Age.

By the Late Prehistoric Period, an extensive network of established trade routes wound their way through the desert, routing goods to populations throughout the Mojave region. Near the project site, trade routes have been postulated as running along the foothills on the southern border of the Antelope Valley and along the Mojave River (Sutton, 1988). The Antelope Valley sat at a convenient geographical location for controlling trade, between the Great Basin and the southern coastal region (Sutton, 1988).

It is also believed that these trade routes encouraged or were the motivating factors for the development of an “increasingly complex socioeconomic and sociopolitical organization” among Protohistoric peoples in

southern California. Housepit village sites are prevalent during this period, as are the presence of Desert Side-notched and Cottonwood projectile points, brownware and buffware ceramics, steatite shaft straighteners, painted millingstones, and, to a lesser degree, coastal shell beads. Beginning around A.D. 1300, however, a decline in trade occurred and well-established village sites were abandoned (Warren, 1984).

Ethnographic Setting

At the time of European contact, numerous groups occupied the area in and surrounding the Antelope Valley. The southeastern portion of the valley, around the Mojave River, was inhabited by the Serrano and Vanyume. The territory of the Tataviam centered on the southwestern extent of the Antelope Valley, the Santa Clara River drainage, and possibly the Sierra Pelonas and the Palmdale area (Sutton, 1988). The Kitanemuk inhabited the southern Tehachapi Mountains and the northern and central portion of the Antelope Valley. To the north, the Kawaiisu occupied the southern Sierra Nevada and the northern Tehachapi Mountains, and may have also inhabited part of the western Mojave Desert (Sutton, 1988). Finally, during the historic period, there is some evidence for the occupation of the Western Mojave by the Chemehuevi.

The Kitanemuk, Kawaiisu, and Serrano are the three groups that have the most well-documented association with the proposed project vicinity and are described in more detail below.

Kawaiisu

The Kawaiisu can be divided into two groups: the Mountain Kawaiisu and the Desert Kawaiisu (Garfinkel and Williams, 2010). Kawaiisu territory encompassed the southern Sierra Nevada south of the Kern River and into the northern Tehachapi Mountains south of the Tehachapi pass (Sutton, 1988). The Desert Kawaiisu inhabited desert areas from north of Rosamond and Rogers Dry Lake, east to as far as the southern portions of Death Valley. No known ethnographic village sites are located in or near the project site; however, the Kawaiisu were known to travel to Koehn Lake to hunt, trade, and collect salt (Garfinkel and Williams, 2010).

The Kawaiisu economy was based on hunting and gathering, and acorns were a primary food source. Deer, chuckwalla, bighorn sheep, rabbits, and pronghorn were hunted. The main social group was the family. Although some leaders were recognized, no formal chiefs existed, and status was achieved, rather than ascribed. Little is known of Kawaiisu material cultural, although complex basketry appeared to be a defining feature (Sutton, 1988). In terms of language, the Kawaiisu were a Numic-speaking group, in contrast to their Takic-speaking neighbors to the south, the Kitanemuk.

Kitanemuk

The Kitanemuk occupied a territory that extended from the Tehachapi Mountains into the western end of the Antelope Valley. While most of their recorded villages were located in the Tehachapi Mountains, their settlement pattern is poorly understood. Some scholars posit that the Antelope Valley's desert floor was used only on a seasonal basis, while others point to archaeological evidence of permanent occupation of the desert floor during the Late Prehistoric Period (Sutton, 1988). While the Kitanemuk maintained friendly relations with their other neighbors such as the Chumash, historic evidence indicates that their relationship with the Tataviam was generally hostile (Blackburn and Bean, 1978).

Like other Takic-speaking groups, such as the Serrano, Kitanemuk society had a patrilineal organization. Families grouped together into villages, which were headed by a team of “administrative elite” composed of a chief, messengers, and shamans. Kitanemuk subsistence was similar to their neighbors the Tataviam. Primary vegetable food sources included acorns, juniper berries, seeds, and yucca buds. Small game such as antelope and deer supplemented these foods.

Serrano

The Serrano occupied territories that ranged from low or moderately low desert to the mountain regions of the Transverse and Peninsular ranges. Serrano territory was bordered to the west roughly by the Cajon Pass in the San Bernardino Mountains, to the east by Twenty-Nine Palms and to the south by Yucaipa Valley. Their territory extended north of the San Bernardino Mountains into the desert near Victorville, along the Mojave River. According to Kroeber (1925) Serrano territory may have extended at least 20 miles to the west of Mount San Antonio.

The Serrano were organized into clans, with the clan being the largest autonomous political entity. They lived in small villages where extended families lived in circular, dome-shaped structures made of willow frames covered with tule thatching. Each clan had one or more principal villages in addition to numerous smaller villages associated with the principal village (Price et al., 2008).

Villages located at higher elevations were placed near canyons that received substantial precipitation or were adjacent to streams and springs. Villages situated at lower elevations were also located close to springs or in proximity to the termini of alluvial fans where the high water table provided abundant mesquite and shallow wells could be dug.

The Serrano subsistence strategy relied upon hunting and gathering, and occasionally fishing. Villages divided into smaller, mobile gathering groups during certain seasons to gather seasonally available foods. The division of labor was split between women gathering and men hunting and fishing (Bean and Smith, 1978; Warren, 1984). Mountain sheep, deer, rabbits, acorns, grass seeds, piñon nuts, bulbs, yucca roots, cacti fruit, berries, and mesquite were some of the more common resources utilized (Bean and Smith, 1978; Warren, 1984).

Despite early European and Spanish contact in 1771, the Serrano remained relatively autonomous until the period between 1819 and 1834 when most of the western Serrano were removed and placed into missions (Bean and Smith, 1978; Warren, 1984).

Historic Context

Early Exploration

Several major trails crossed the Mojave before and at the time of Spanish contact, and continued to be used not only by the native peoples but also by Euro-American explorers. The Yuma-Needles Trail ran from south of Yuma up the western side of the Colorado River to the Needles area. The Mojave Trail ran from Needles west across the desert to the coast, following the path of the Mojave River for a portion of the route. The Cocomaricopa Trail ran west from Arizona through the Salton Sink (Coachella Valley) and then northwest to meet the Mojave Trail near San Bernardino (Greene, 1983).

The first Europeans known to have visited the Mojave were Don Pedro Fages in 1772 and Juan Bautista de Anza and Father Francisco Garcés in 1774 (Greene, 1983). In 1775, Father Garcés separated from de Anza and crossed the Mojave along the ancient Mojave Trail from Needles west to the San Gabriel Mission, travelling past Soda Lake and resting at modern-day Afton Canyon in 1776 (Earle, 2005).

The Spanish missions that dotted the California coast never spread inland to the Mojave, and the desert remained relatively unexplored and unsettled by Europeans for much of the next century. The Romero-Estudillo Expedition of 1823–24 was an attempt by the Spanish to establish a secure route between the California Coast and Tucson; however, despite two attempts, the expedition never managed to make it as far as the Colorado River (Greene, 1983).

The first recorded American visitors to the Mojave were the party of Jedediah Smith, who crossed the Mojave along the Mojave Trail in 1826. Ewing Young and Kit Carson followed his route in the 1820s and 1830s. Kit Carson, who had participated in Jedediah Smith's 1828 expedition, later was the guide for John C. Fremont in 1844. This expedition was one of the first to document the Antelope Valley in detail.

The Homestead Act

In 1862, the Homestead Act was passed, allowing settlement of public lands and requiring only residence, improvement, and cultivation of the land. Although settlement had been encouraged by the Homestead Act of 1862 and the Desert Land Act of 1877, which permitted disposal of 640-acre tracts of arid public lands at \$1.25 per acre to homesteaders if they proved reclamation of the land by irrigation, the Antelope Valley did not see much growth until after the coming of the railroad. In 1876, the Southern Pacific Railroad line (now the Union Pacific Railroad) that ran south from the San Joaquin Valley was connected to the line from Los Angeles, running through the Fremont and Antelope Valleys. Stops along this line were located at Cantil and Cinco, north of the project area, and Mojave, south of the project area. In 1884, this line joined the Atchison, Topeka, & Santa Fe line that ran east through Needles (Boyd, 2000).

In the 1880s, a number of groups established colonies in the Antelope Valley, including the Quakers, German Lutherans, and Utopian Socialists. However, fluctuating water levels and years of severe drought brought a quick end to many of these colonies. By 1930, over 80 settlements had been established in the region, most along railroad lines. The town of Rosamond was established in 1877 along the Southern Pacific line and named for the daughter of a Southern Pacific executive (Gudde, 1960).

Mining

In the Antelope Valley, mining played a significant role in the development of the area. Kern County was known for its gold production, primarily from its two most prominent mines: the Yellow Aster in Randsburg, and the Golden Queen near Mojave (Shumway et al., 1980). In addition to gold, early mining also concentrated on borax and later potash. In 1866, the Mining Act declared all mineral lands of public domain free and open to exploration and occupancy.

A prominent Antelope Valley mining site was Standard Hill, located within the Mojave mining district (Troxel and Morton, 1962). The Mojave district was comprised of about 70 square miles of primarily gold and silver mines. Gold was first discovered within the district in 1894 by George Bowers, at the site of the Yellow Rover Mine on Standard Hill. Production continued until 1914, when most of the district's mines ceased to operate. However, the onset of the Great Depression in 1929 led to a surge in mining activity in the Mojave Mining District (Troxel and Morton, 1962). An increase in the price of gold in 1934 brought a

rush of prospectors to the district, and by 1935 the district was again flourishing (Miller and Miller, 1976). The district had its heyday in the 1930s and early 1940s, and produced more than \$12 million in gold and silver in the 10-year period between 1932 and 1942 (Shumway et al, 1980). Mining continued until the onset of World War II, when Executive Order L-208 forced the closure of all gold mines, in order to shift the mining workforce to other, more essential war-related commodities. Total production in the District, as of 1958, was more than \$20 million in gold and silver (Troxel and Morton, 1962).

Standard Hill was home to a number of prominent mines, including the Yellow Rover, Exposed Treasure, and Desert Queen mines. These mines, collectively referred to as the Standard Group of Mines, were the site of the first gold discovery in the Mojave district. In 1901, a 20-stamp mill and cyanide plant were erected in order to process the mined ore (Troxel and Morton, 1962). The Standard Group of Mines produced approximately \$3,500,000 in gold between 1884 and 1958.

Early Settlement

In the 1880s, a number of groups established colonies in the Antelope Valley, including the Quakers, German Lutherans, and Utopian Socialists. However, fluctuating water levels and years of severe drought brought a quick end to many of these colonies. By 1930, over 80 settlements had been established in the region, most along railroad lines. The town of Rosamond was established in 1877 along the Southern Pacific line and named for the daughter of a Southern Pacific executive (Gudde, 1960).

Agriculture

Agriculture and ranching were the primary economic focus of homesteaders in the Antelope Valley. During the initial wave of settlement in the 1880 and 1890s, dry-farming methods proved fairly successful. However, this was in large part because these were unusually wet years. A severe drought between 1894 and 1904 brought an end to most agricultural enterprises. After the drought, irrigation was used with some success, particularly for the cultivation of alfalfa, which became the valley's primary crop (COLA Public Library, 2010). However, the lack of reliable water prevented agriculture from becoming a major industry.

In the arid environment of the high desert, water sources were always a factor in the success of agriculture. Farms were generally located near dependable sources of water such as rivers or springs. Some farmers, however, used wells for irrigation or located their farms near dry lake beds, which periodically flooded during the wet season.

The Los Angeles Aqueduct

As the local water resources of Los Angeles were no longer able to meet the growing city's needs, the Owens Valley was identified as a potential water source for Los Angeles. Led by William Mulholland, the Los Angeles Department of Water and Power (LADWP) proposed the construction of a water system to transport water from the Owens Valley to Los Angeles. The construction of the Los Angeles Aqueduct began in 1908, and was completed in 1913. Five thousand workers were employed during the construction of the 223 miles of 12-foot diameter steel pipe. Gravity carried water along the aqueduct from the Owens Valley, and eventually Bishop and Mono Lake Basin areas, down to the Los Angeles Basin (LADWP, 2009). In 1963, the City announced plans to build a second Los Angeles Aqueduct from the Owens Valley in order to further utilize groundwater resources of the Owens Valley by increased pumping and prevent water lost in the Mono Basin to the saline waters of Mono Lake. The second aqueduct was completed in 1970.

Existing Cultural Resources

Methods Used to Identify Known Cultural Resources

To evaluate the project's potential effects on significant cultural resources, Dudek conducted cultural resources assessments for the project, which included a records search, a historic map review, a pedestrian survey, and subsurface testing (Dudek, 2018; Dudek, 2019). The methodology and results of Dudek's assessments are summarized below.

SSJVIC Records Search

A cultural resources record search for the project site was conducted by staff at the Southern San Joaquin Valley Information Center (SSJVIC) housed at the California State University, Bakersfield on April 1 and May 15, 2017 (Dudek, 2019). The record searches included a review of all previous cultural resources studies, recorded archaeological resources, and built-environment resources within 1 mile of the project site. Additional sources consulted included the National Register of Historic Places (NRHP), the Historic Property Data File, the listing of California Historical Landmarks, the California Registry of Historic Resources (CRHR), the California Inventory of Historic Resources, the California Points of Historical Interest, and the Archaeological Determinations of Eligibility

The results of the SSJVIC records searches indicate 26 previous cultural resources studies have been conducted within or immediately adjacent to the project site.

The SSJVIC records indicate that 38 cultural resources have been previously recorded within the project site. These 38 resources include the following:

- Seven historic-period archaeological sites: P-15-002015 (homestead remnants), -011768 (refuse deposit), -012716 (borrow pit and structural remains), -015544 (survey marker), -017096 (refuse scatter), SS-S-111 (refuse scatter), and SS-S-123 (refuse scatter)
- Five prehistoric archaeological sites: P-15-005793 (temporary camp), -014700 (lithic scatter), -015814 (lithic scatter), SS-S-110 (lithic scatter), and SS-S-130 (lithic scatter)
- Two multicomponent archaeological sites: P-15-000472 (prehistoric lithic scatter and historic-period mining feature) and -017297 (prehistoric lithic scatter and historic-period refuse scatter)
- Four historic-period isolates: P-15-013814 (isolated can), -017119 (isolated can), -017121 (isolated can), and SS-I-114 (isolated glass fragment)
- Eight prehistoric isolates: P-15-000473 (isolated flake), -007592 (isolated core), -007595 (isolated flake), -013683 (isolated flake), -015815 (isolated flake), -015816 (isolated flake), -015817 (isolated flake), and SS-I-104 (isolated flake)
- Eight historic-period built resources P-15-002050 (Union Pacific Railroad), -003528 (Wagon Road), -003534 (unnamed road), -003537 (Oak Creek Road), -003549 (Los Angeles Aqueduct), -003929 (LA-Owens River Road), 017305 (SR-14/Aerospace Highway), and -018681 (LADWP Owens Gorge 230 kV transmission line)
- Four resources with no associated site records.

Historic Map Review

Dudek (2019) conducted a review of historic maps and aerial photographs to identify historic land uses within the project site and its vicinity. Maps reviewed included the 1856, 1899, 1901, and 1935 plat maps, as well as topographic maps from the years 1915, 1943, 1947, 1954, 1957, and 1964. The plat maps indicate a number transportation routes in the vicinity of the project site. The 1935 plat map depicts a number of roads and railroad lines bisecting the project site. The topographic maps show the project site and vicinity were only sparsely developed in the first decades of the twentieth century. The 1908 topographic map shows that the project site fell within the Mojave Division (Division Number 8) for the construction of the Los Angeles Aqueduct, and railroad stations are depicted at Chaffee, Gloster, and Mojave, located 2, 1.75, and 1.5 miles from the project site, respectively.

Cultural Resources Surveys

Dudek (2019) conducted an intensive pedestrian survey that included 1,831 acres of the total 2,006-acre project site in May of 2017 and February and March of 2018. The remaining 271 acres were surveyed by Dudek as part of work associated with a separate project and documented in a separate report (Dudek, 2019). The surveys were conducted using transects spaced at 15-meter (approx. 50 feet) intervals and all visible ground surfaces, bedrock outcrops, and rodent burrows, as well as natural or human-made exposures of sediments, were intensively inspected. Identified cultural resources were documented on California Department of Parks and Recreation (DPR) 523 site record forms. Archaeological sites were defined consisting of three or more artifacts within a 50-meter diameter and isolates were defined less than three artifacts within a 50-meter diameter.

Cultural Resources Subsurface Testing

Dudek (2019) conducted surface and subsurface testing of previously unevaluated archaeological sites within the project site to determine if the resources have potential to answer regional research question and qualify for listing in the CRHR under Criterion 4 (Data Potential). Archaeological sites consisting of historic-period refuse scatters were subject to surface analysis and the collection of unique diagnostic artifacts. The surface analysis focused on the morphology, condition, technology, and function of each artifact class.

Prehistoric archaeological sites were subject to some form of surface collection and/or inspection and subsurface excavations. Sites containing artifact concentrations were sampled using 5 meter by 5 meter controlled surface collection (CSC) units. Sites with low artifact densities were subject to a “grab sample” collection strategy wherein a general surface collection was undertaken.

Excavations at prehistoric archaeological sites included a combination of Shovel Test Pits (STPs), Test Excavation Units (TEUs) and Surface Scrape Units (SSUs). STPs were initially excavated to determine the horizontal extent of a site’s subsurface component and measured 0.5 meters by 0.25 meters. STPs were excavated in arbitrary 20 cm levels to minimum depths of 40 cm, or until culturally sterile strata were encountered. Where STPs showed the presence of relatively dense artifact deposits, TEUs were excavated adjacent to or near productive STPs in order to continue investigations in those areas. TEUs measured 1 meter by 0.5 meters and were excavated in arbitrary 10 cm levels, to depths varying between 10 and 120 centimeters below surface, depending on rates of artifact recovery. At sites where cultural deposits were obviously surficial, SSUs measuring anywhere from 1 meter by 1 meter to 2 meter by 2 meter in size were excavated in order to augment artifact recovery by removing greater volumes of shallow cultural matrix. All excavated soils, regardless of unit size or depth, was screened through 1/8-inch mesh.

Cultural Resources Recorded within the Project Site

As a result of the cultural resources survey, 80 cultural resources were documented or updated within the project site. These include 20 prehistoric archaeological sites, 11 historic-period archaeological sites, five multicomponent archaeological site, 32 prehistoric isolates, four historic-period isolates, and eight historic-period built environment resources. Two additional resources, P-15-005793 (prehistoric archaeological site) and -015873 (unknown) could not be relocated during the survey.

Table 4.5-1, *Summary of Cultural Resources and Evaluations*, provides a summary of the 80 cultural resources identified in the project site and their CRHR evaluation status. Detailed resource descriptions and evaluations are included in the cultural resources technical reports prepared by Dudek (2018, 2019), found in Appendix E1.

TABLE 4.5-1: SUMMARY OF CULTURAL RESOURCES AND EVALUATIONS

P Number (P-15-)	Permanent Trinomial (CA-KER-)	Temporary Identifier	Resource Description	CRHR Eligibility
000472	472/H	—	Multicomponent archaeological site: prehistoric lithic scatter and historic-period placer mine	Recommended not eligible
000473	473	—	Prehistoric isolate: flake	Not eligible
002015	2015H	—	Historic-period archaeological site: homestead site	Recommended not eligible
002050	—	—	Historic-period built resource: Union Pacific Railroad	Recommended eligible
003528	—	—	Historic-period built resource: Wagon Road	Not evaluated
003534	—	—	Historic-period built resource: unnamed road	Not evaluated
003537	—	—	Historic-period built resource: Oak Creek Road	Not evaluated
003549	3549H	—	Historic-period built resource: Los Angeles Aqueduct	CRHR eligible
003929	—	—	Historic-period built resource: Los Angeles Owens River Road	Recommended eligible
005793	4918	—	Prehistoric Archaeological site: temporary camp site	Not relocated during survey; not evaluated
007592	—	—	Prehistoric isolate: core	Not eligible
007595	—	—	Prehistoric isolate: flake	Not eligible
011768	6823H	—	Historic-period archaeological site: refuse deposit	Recommended not eligible
012716	7174H	—	Historic-period archaeological site: borrow pit and structural remnants	Recommended not eligible
013683	—	—	Prehistoric isolate: flake	Not eligible
013814	—	—	Historic-period isolate: can	Not eligible
015815	—	—	Prehistoric isolate: flake	Not eligible

TABLE 4.5-1: SUMMARY OF CULTURAL RESOURCES AND EVALUATIONS

P Number (P-15-)	Permanent Trinomial (CA-KER-)	Temporary Identifier	Resource Description	CRHR Eligibility
015816	—	—	Prehistoric isolate: flake	Not eligible
015817	—	—	Prehistoric isolate: flake	Not eligible
015873	—	—	Unknown	Not relocated during survey; not evaluated
017096	—	—	Historic-period archaeological site: refuse scatter	Recommended not eligible
017119	—	—	Historic-period isolate: can	Not eligible
017121	—	—	Historic-period isolate: can	Not eligible
017297	9487H	—	Multicomponent archaeological site: prehistoric flake and historic-period refuse scatter	Recommended not eligible
017305	—	—	Historic-period built resource: SR-14/Aerospace Highway	Not evaluated
018681	—	—	Historic-period built resource: LADWP Owens Gorge 230 kV transmission line	CRHR Eligible
—	—	SS-I-105	Prehistoric isolate: flake	Not eligible
—	—	SS-I-106	Prehistoric isolate: flake	Not eligible
—	—	SS-I-107	Prehistoric isolate: flake	Not eligible
—	—	SS-I-108	Prehistoric isolate: flake	Not eligible
—	—	SS-I-109	Prehistoric isolate: flake	Not eligible
—	—	SS-I-110	Prehistoric isolate: flake	Not eligible
—	—	SS-I-111	Prehistoric isolate: flake	Not eligible
—	—	SS-I-114	Historic-period isolate: glass fragment	Not eligible
—	—	SS-I-115	Prehistoric isolate flake	Not eligible
—	—	SS-I-116	Prehistoric isolate: flake	Not eligible
—	—	SS-I-117	Prehistoric isolate: flake	Not eligible
—	—	SS-I-118	Prehistoric isolate: flake	Not eligible
—	—	SS-I-120	Prehistoric isolate: flake	Not eligible
—	—	SS-I-121	Prehistoric isolate: flake	Not eligible
—	—	SS-I-122	Prehistoric isolate: handstone	Not eligible
—	—	SS-I-123	Prehistoric isolate: flake	Not eligible
—	—	SS-I-124	Prehistoric isolate: flake	Not eligible
—	—	SS-I-125	Prehistoric isolate: flake	Not eligible
—	—	SS-I-126	Prehistoric isolate: flake	Not eligible
—	—	SS-I-127	Prehistoric isolate: flake	Not eligible

TABLE 4.5-1: SUMMARY OF CULTURAL RESOURCES AND EVALUATIONS

P Number (P-15-)	Permanent Trinomial (CA-KER-)	Temporary Identifier	Resource Description	CRHR Eligibility
—	—	SS-I-128	Prehistoric isolate: flake	Not eligible
—	—	SS-I-129	Prehistoric isolate: flake	Not eligible
—	—	SS-I-130	Prehistoric isolate: flake	Not eligible
—	—	SS-I-131	Prehistoric isolate: flake	Not eligible
—	—	SS-I-132	Prehistoric isolate: flake	Not eligible
—	—	SS-I-133	Prehistoric isolate: flake	Not eligible
—	—	SS-S-110	Multicomponent archaeological site: prehistoric habitation site and historic-period refuse scatter	Recommended eligible
—	—	SS-S-123	Historic-period archaeological site: refuse scatter	Recommended eligible
—	—	SS-S-130	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-101	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-102	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-103	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-104	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-105	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-106	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-107	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-109	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	Recommended not eligible
—	—	SS-S-111	Historic-period archaeological site: refuse scatter	Recommended not eligible
—	—	SS-S-112	Historic-period archaeological site: refuse scatter	Recommended not eligible
—	—	SS-S-113	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-114	Prehistoric archaeological site: lithic scatter	Recommended not eligible

TABLE 4.5-1: SUMMARY OF CULTURAL RESOURCES AND EVALUATIONS

P Number (P-15-)	Permanent Trinomial (CA-KER-)	Temporary Identifier	Resource Description	CRHR Eligibility
—	—	SS-S-115	Historic-period archaeological site: refuse scatter	Recommended not eligible
—	—	SS-S-116	Multicomponent archaeological site: prehistoric lithic scatter and historic-period refuse scatter	Recommended not eligible
—	—	SS-S-117	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-118	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-119	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-120	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-121	Historic-period archaeological site: refuse scatter	Recommended not eligible
—	—	SS-S-122	Historic-period archaeological site: refuse scatter	Recommended not eligible
—	—	SS-S-124	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-125	Historic-period archaeological site: refuse scatter	Recommended not eligible
—	—	SS-S-126	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-127	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-128	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-129	Prehistoric archaeological site: lithic scatter	Recommended not eligible
—	—	SS-S-130	Prehistoric archaeological site: lithic scatter	Recommended not eligible

Of the 80 documented and updated resources, 36 archaeological sites were subject to testing to determine the presence/absence of subsurface archaeological deposits and to assess the sites' data potential for CRHR evaluation under Criterion 4 (Data Potential). Of these 36 resources, 35 are recommended not eligible for listing in the CRHR due to a lack of data potential and do not qualify as historical resources or unique archaeological resources. The remaining resource (SS-S-110 [prehistoric habitation site and historic-period refuse scatter]) is recommended eligible for listing in the CRHR under Criterion D, and, therefore, qualifies as a historical resource pursuant to CEQA

Of the eight historic-period built environment resources, two (P-15-003549 [Los Angeles Aqueduct] and -018681 [LADWP Owens Gorge 230 kV transmission line]) are determined eligible for listing in the CRHR and two (P-15-002050 [Union Pacific Railroad] and -003929 [Los Angeles Owens River Road]) are recommended eligible for listing in the CRHR and, therefore, qualify as historical resources. The remaining four historic-period built environment resources (P-15-003528 [Wagon Road], -003534 [unnamed road], -003537 [Oak Creek Road], and -017305 [SR-14/Aerospace Highway]) have not been evaluated, but have the potential to qualify as historical resources.

The two un-relocated archaeological resources (P-15-005793 and -015873) were not evaluated. Although no surface manifestations of these two sites could be identified, they may contain subsurface archaeological deposits. Should subsurface archaeological deposits underlie the mapped location of these resources, they could qualify as historical resources or unique archaeological resources pursuant to CEQA.

Finally, the 36 identified isolated artifacts lack archaeological context and, therefore, do not provide sufficient information to be considered significant resources. The 36 isolates do not have the potential to yield information important to the study of prehistory or history, and the information potential of the isolates was exhausted in the process of documenting the finds on DPR 523 forms and mapping their location. The isolates documented as part of the survey are not eligible for listing in the CRHR, nor are they considered historical or unique archaeological resources under CEQA.

Potential for Unknown Buried Cultural Resources

The Antelope Valley floor is covered in thick deposits of Quaternary alluvial sediments. Dibblee (1963) subdivides the alluvium into two units: the older (Pleistocene) Quaternary sediments, and younger (Holocene) alluvial surface deposits. These alluvial sediments are derived from nearby granitic mountains and have been deposited on the valley floor over the course of thousands of years. The younger Quaternary valley alluvial deposits, composed of weathered soil material and poorly sorted clay, silt, and sand, may be up to several-hundred feet thick in valley areas, and thinner on slopes at the valley margins.

In many places, the interface between older land surfaces and newer alluvial depositions is marked by a well-developed buried soil profile, or a paleosol. Paleosols preserve the composition and character of the earth's surface prior to subsequent sediment deposition; thus, paleosols have the potential to preserve archaeological resources if the area had been occupied or settled by humans. Holocene alluvium and Pleistocene-age surfaces buried by Holocene alluvium are the most likely landforms to contain paleosols. However, because human populations have grown since the arrival of the area's first inhabitants, younger paleosols (late Holocene) are more likely to yield archaeological resources than older paleosols (early Holocene or Pleistocene).

Given that these portions of the Antelope Valley within the Project site 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 alluvium has buried prehistoric archaeological sites that once existed on the surface. As such, there is a possibility that buried archaeological deposits may be encountered during project-related excavation.

4.5.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Register of Historical Resources

Created in 1992 and implemented in 1998, the California Register of Historical Resources is “an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.” Certain properties, including those listed in, or formally determined eligible for listing in, the National Register and California Historical Landmarks numbered 770 and higher, are automatically included in the California Register. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the California Register. A resource, either an individual property or a contributor to a historic district, may be listed in the California Register if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on National Register criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC 5024.1, Title 14 California Code of Regulations [CCR], Section 4852(c), a cultural resource must retain integrity to be considered eligible for the California Register. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as farming, often lack integrity because they have been directly damaged or moved from their original location, among other changes.

Typically, an archaeological site in California is recommended eligible for listing in the California Register based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions.

California Historical Landmarks

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have Statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770. CHLs #770 and above are automatically listed in the California Register.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type in the State or within a large geographic region (Northern, Central, or southern California);
2. It is associated with an individual or group having a profound influence on the history of California; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California Points of Historical Interest

California points of historical interest (PHI) are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. PHI designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a PHI, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type within the local geographic region (city or county);
2. It is associated with an individual or group having a profound influence on the history of the local area; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. The CEQA *Guidelines* (Title 14 CCR Section 15064.5) recognize that an historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the CEQA *Guidelines* apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired) in the significance of an historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (CEQA *Guidelines* Sections 15064.5(b)(1), 15064.5(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the CEQA *Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, for which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.2(b)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA *Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA *Guidelines* Section 15064.5(c)(4)).

Senate Bill 18

Senate Bill 18 (SB 18) (Statutes of 2004, Chapter 905), which went into effect January 1, 2005, requires local governments (city and county) to consult with Native American tribes before making certain planning decisions and to provide notice to tribes at certain key points in the planning process. The intent is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level, land use designations are made by a local government. The consultation requirements of SB 18 apply to general plan or specific plan processes proposed on or after March 1, 2005.

According to the *Tribal Consultation Guidelines: Supplement to General Plan Guidelines* (Governor's Office of Planning and Research, 2005), the following are the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45-day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

Native American Heritage Commission

PRC Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

California Public Records Act

Sections 6254(r) and 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public related to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical

Resources Commission, the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency”.

California Health and Safety Code, Sections 7050 and 7052

Health and Safety Code, Section 7050.5, declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

California Penal Code, Section 622.5

California Penal Code, Section 622.5, provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

Public Resources Code, Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to cultural resources. The policies and implementation measures in the Kern County General Plan related to cultural resources that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Chapter 1. Land Use, Open Space and Conservation Element

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

- Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.
- Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.
- Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.
- Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The implementation measure in the Mojave Specific Plan for cultural resources applicable to the project is provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 10. Implementation**H. Community Image*****Implementation Measure***

- Measure H-4b Prior to discretionary development of any individual project within the Specific Plan area, a complete records and literature search and/or a Phase 1 Assessment shall be conducted to identify the presence of any specific cultural resources and/or Native American sacred lands at the project site. Recommendations shall be incorporated into project approval.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. The general provision in the West Edwards Road Settlement Specific Plan for cultural resources applicable to the project is provided below. The West Edwards Road Settlement Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the West Edwards Road Settlement Specific Plan are incorporated by reference.

Chapter 5. General Provisions

Provision 2 Any discretionary development project that substantially disturbs property not previously developed or is not substantially surrounded by development as determined by the Director of Kern County Department of Planning and Development Services shall submit a cultural survey, including archaeological, paleontologic, and historical resources; said survey shall be completed in accordance with any guidelines supplied by the Southern San Joaquin Valley Archaeological Information Center at California State University at Bakersfield. Any Submittal shall also include mitigation measures which satisfactorily address the requirements of said inventory and the Kern County Department of Planning and Development Services.

4.5.4 Impacts and Mitigation Measures

Methodology

Impacts on cultural resources could result from ground-disturbing activities and/or damage, destruction, or alteration of historic structures. Ground-disturbing activities include project-related excavation, grading, trenching, vegetation clearance, the operation of heavy equipment, or other surface and sub-surface disturbance that could damage or destroy surficial or buried cultural resources including prehistoric or historic-period archaeological resources or human burials. To evaluate the project's potential effects on significant archaeological and historic built environment resources, Dudek conducted cultural resources assessments of the project site and gen-tie study area, which included archival research, a cultural resources survey, and testing, and evaluation of resources for inclusion in the CRHR (Dudek, 2018; Dudek, 2019).

Thresholds of Significance

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

- a. Cause a substantial adverse change in the significance of a historical resource, as defined in CEQA *Guidelines* Section 15064.4;
- b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA *Guidelines* Section 15064.4; or
- c. Disturb any human remains, including those interred outside of dedicated cemeteries.

All of the above impact thresholds are addressed in the "Project Impacts" section below. Impacts to tribal cultural resources have been addressed in Section 4.16, *Tribal Cultural Resources*, of this EIR.

Project Impacts

Impact 4.5-1: The project would cause a substantial adverse change in the significance of a historical resource, as defined in CEQA *Guidelines* Section 15064.5.

As a result of the cultural resources studies conducted for the project, 80 cultural resources were identified within the project site. These resources include 36 archaeological sites (20 prehistoric sites, 11 historic-period sites, and five multicomponent archaeological sites), eight historic built environment resources (P-15-002050 [Union Pacific Railroad], -003528 [Wagon Road], -003534 [unnamed road], -003537 [Oak Creek Road], -003549 [Los Angeles Aqueduct], -003929 [Los Angeles Owens River Road], -017305 [SR-14/Aerospace Highway], and -018681 [LADWP Owens Gorge 230 kV transmission line]), and 36 isolates (32 prehistoric isolates and four historic-period isolates). Two additional resources, P-15-005793 (prehistoric archaeological site) and -015873 (unknown) could not be relocated during the survey.

The 36 archaeological sites were subject to surface and sub-surface testing to determine if any of the sites are eligible for inclusion in the CRHR under Criterion D (Data Potential) due to their ability to answer regional research questions. Of the 36 archaeological sites 35 are recommended not eligible for listing in the CRHR and, therefore, do not qualify as historical resources pursuant to CEQA. The remaining archaeological site (SS-S-110 [prehistoric habitation site and historic-period refuse scatter]) is recommended eligible for listing in the CRHR and qualifies as a historical resource pursuant to CEQA.

Of the eight identified built environment resources, two are determined eligible (P-15-003549 [Los Angeles Aqueduct] and -018681 [LADWP Owens Gorge 230 kV transmission line]) and two are recommended eligible (P-15-002050 [Union Pacific Railroad] and -003929 [Los Angeles Owens River Road]) for listing in the CRHR and, therefore, qualify as historical resources pursuant to CEQA. The remaining four resources (P-15-003528 [Wagon Road], -003534 [unnamed road], -003537 [Oak Creek Road], and -017305 [SR-14/Aerospace Highway]) have not been evaluated for the CRHR, but have the potential to qualify as historical resources.

The 36 identified isolates lack archaeological context and, therefore, generally do not provide sufficient information to be considered significant resources. As such, the isolates documented as part of the survey are recommended not eligible for listing in the CRHR, and do not qualify as historical resources pursuant to CEQA.

In summary, of the 80 cultural resources identified within the project site, one archaeological site (SS-S-110 [prehistoric habitation site and historic-period refuse scatter]) and eight historic-period built environment resources (P-15-002050 [Union Pacific Railroad], -003528 [Wagon Road], -003534 [unnamed road], -003537 [Oak Creek Road], -003549 [Los Angeles Aqueduct], -003929 [Los Angeles Owens River Road], -017305 [SR-14/Aerospace Highway], and -018681 [LADWP Owens Gorge 230 kV transmission line]) are eligible or potentially eligible for listing in the CRHR and qualify as historical resources. Resource SS-S-110 is located within the northern site portion of the project site and would be avoided through project design. Therefore, no impacts to SS-S-110 are anticipated as a result of project implementation. The eight historic-period built resources that bisect various segments of the gen-tie alignments would also be avoided by current project design and, thus, no impacts to these resources are anticipated.

Although 35 of the 36 archaeological sites do not qualify as historical resources, there exists the possibility that these sites may be underlain by subsurface deposits not identified during the testing. The project site is covered by Holocene alluvium, which has been deposited over the course of known human occupation in

the region, possibly burying prehistoric archaeological sites that once existed on the surface. Therefore, there is the potential that the known archaeological sites may contain buried archaeological deposits that could be encountered during project-related excavation. Similarly, previously unknown archaeological deposits may underlie the ground surface. Should buried archaeological deposits be uncovered during project implementation, and should such resources qualify as historical resources under CEQA, they could be subject to significant impacts. To reduce potential impacts to less than significant, Mitigation Measures MM 4.5-1 through MM 4.5-4 require cultural resources sensitivity training for construction workers, establishment of an exclusion area around archaeological site SS-S-110, archaeological and Native American monitoring during construction, and appropriate treatment of unearthed archaeological resources during construction.

Mitigation Measures

MM 4.5-1: The project proponent/operator shall retain a Lead Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior, 2011), to carry out all mitigation measures related to archaeological and unique historical resources. The contact information for this Lead Archaeologist shall be provided to the Kern County Planning and Natural Resources Department prior to the commencement of any construction activities onsite. Further, the Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project:

- a. Prior to commencement of any ground disturbing activities, the Lead Archaeologist in consultation with the Native American monitor(s) shall develop a Cultural Resources Sensitivity Training for all personnel working on the proposed project. A Cultural Resources Sensitivity Training Guide approved by the Lead Archaeologist shall be provided and discussed with all personnel. The training guide may be presented in video form. A copy of the proposed training materials shall be provide to the Planning and Natural Resources Department prior to the issuance of any grading or building permit.

The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Lead Archaeologist and/or Native American monitor(s) for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.

- b. A copy of the Cultural Resources Sensitivity Training Guide/Materials shall be kept onsite and available for all personnel to review and be familiar with as necessary. It is the responsibility of the Project Owner to ensure all employees receive appropriate training before the work onsite.

MM 4.5-2: The project proponent shall ensure the following measure is implemented for the prehistoric archaeological site located within the northern site (SS-S-110):

- a. Prior to conducting initial ground disturbance in the vicinity of the archaeological site SS-S-110, and in coordination with the Lead Archaeologist and Native American monitor(s), an exclusion area, consisting of the significant deposits located at SS-S-110 and a 50-foot buffer, shall be temporarily marked with exclusion markers or

protective fencing as determined by the Lead Archaeologist in consultation with the Native American monitor. In the event avoidance is not feasible, a data recovery plan shall be prepared by a professional archeologists that is reviewed and approved by the County in consultation with the Native American monitor.

MM 4.5-3: During implementation of the project, the services of Native American Tribal Monitor(s) working under the supervision of the Lead Archaeologist, as identified through consultation with appropriate Native American tribes, shall be retained by the project proponent/operator to monitor all initial ground-disturbing activities associated with project-related construction activities, as follows:

- a. All initial excavation and ground-disturbing activities shall be monitored by archaeological and Native American monitors.
- b. The Lead Archaeologist, archaeological monitors, and Native American monitors shall be provided all project documentation related to cultural resources within the project site prior to commencement of ground disturbance activities. 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 Lead Archaeologist, archaeological monitor, and Native American monitor.
- c. The archaeological monitor(s) shall keep monitoring logs and the Lead Archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the Lead Archaeologist shall prepare a monitoring report detailing the results of monitoring, which shall be submitted to the Kern County Planning and Natural Resources Department and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.

MM 4.5-4: During implementation of the project, in the event archaeological materials are encountered during the course of grading or construction beyond those already documented and found to be not significant for listing in the CRHR, the project contractor shall cease any ground disturbing activities within 50 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 50-foot radius from the location of discovery. Signs shall be posted that establish it as an Environmentally Sensitive Area and all entrance to the area shall be avoided until the discovery is assessed by the Lead Archaeologist, as well as the Native American monitor if the discovery involves resources of interest to Native American tribes, including but not limited to prehistoric archaeological sites or tribal cultural resources. The Lead Archaeologist in consultation with the Native American monitor, if appropriate, shall evaluate the significance of the resources and recommend appropriate treatment measures. If further treatment of the discovery is necessary, the Environmentally Sensitive Area shall remain in place until all work is completed. Per California Environmental Quality Act Guidelines (CEQA) Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist in consultation with the Native American monitor shall develop additional treatment measures in consultation with the County, which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural

resources if the resources are prehistoric or Native American in nature. Archaeological materials recovered during any investigation shall be curated at an accredited curation facility. The Lead Archaeologist, in consultation with a designated Native American monitor, shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.

Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.5-1 through MM 4.5-4, impacts would be less than significant.

Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.

As discussed above under Impact 4.5-1, 36 archaeological sites and 36 isolates were identified within the project site. The isolates lack archaeological context and, therefore, generally do not provide sufficient information to be considered significant resources. Based on the results of subsurface testing, one of the archaeological sites (SS-S-110) is considered a historical resource and, therefore, cannot qualify as a unique archaeological resources. The remaining 35 archaeological sites do not contain adequate subsurface deposits to qualify as unique archaeological resources.

As discussed previously under Impact 4.5-1, there is a potential for the project to impact previously unknown, buried archaeological deposits. The project site is covered by Holocene-age alluvium. Given that the Holocene alluvium was deposited during the course of human occupation of the region, there is a possibility that the sediments may have buried archaeological sites. As such, buried archaeological sites may be encountered during project-related excavation. In the event that unknown archaeological resources are discovered during project construction, significant impacts could occur. However, with implementation of Mitigation Measures MM 4.5-1 through 4.5-4, which require cultural resources sensitivity training for construction workers, archaeological and Native American monitoring during construction, exclusion area around known archeological site, and appropriate treatment of unearthed archaeological resources during construction, potential impacts would be reduced to less than significant.

Mitigation Measures

Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required.

Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.5-1 through MM 4.5-4, impacts would be less than significant.

Impact 4.5-3: The project would disturb any human remains, including those interred outside of formal cemeteries.

There is no indication, either from the archival research results or the archaeological survey, that any particular location within the project area has been used for human burial purposes in the recent or distant past. However, in the event that human remains are inadvertently discovered during project construction activities, the human remains could be damaged or disturbed, which would be a significant impact. Implementation of Mitigation Measure MM 4.5-5 would ensure that any human remains encountered during project implementation are properly treated, thus reducing impacts to a less-than-significant level.

Mitigation Measures

MM 4.5-5: If human remains are uncovered during project construction, the project contractor shall immediately halt work within 100 feet of the find, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.4 (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.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.5-5, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts that the projects, zone changes, and general plan amendments discussed in Chapter 3, *Project Description*, of this EIR, would have on cultural resources. The geographic area of analysis of cumulative impacts for cultural resources includes the western portion of the Antelope Valley. The western Antelope Valley includes a portion of the southeast corner of Kern County and a portion of northern Los Angeles County. This geographic scope of analysis is appropriate because the archaeological and historical resources within this area are expected to be similar to those that occur on the project site because of their proximity, and because the similar environments, landforms, and hydrology would result in similar land-use—and thus, site types. Further, this is a large enough area to encompass any effects of the project on cultural resources that may combine with similar effects caused by other past, current, and reasonably foreseeable future projects, and provides

a reasonable context wherein cumulative actions could affect cultural resources. Multiple projects, including solar energy production facilities, are proposed throughout the western Antelope Valley. Cumulative impacts to cultural resources in the western Antelope Valley could occur if other projects, in conjunction with the proposed project, had or would have impacts on cultural resources that, when considered together, would be significant.

Development of the proposed project, in combination with other projects in the area, has the potential to contribute to a cumulatively significant cultural resources impact due to the potential loss of historical and archaeological resources unique to the region. However, none of the significant historical and archaeological resources identified within the project site would be impacted, and mitigation measures are included in this EIR to reduce potentially significant impacts to unknown archaeological resources that could be encountered during construction of the proposed project. Implementation of Mitigation Measure MM 4.5-1 requires cultural resources sensitivity training for construction workers. Mitigation Measure MM 4.5-2 requires establishment of an exclusion area around the one significant archaeological site, SS-S-110. Mitigation Measure MM 4.5-3 requires archaeological and Native American monitoring to ensure that any currently unknown archeological resources that qualify as historical resources or unique archaeological resources are identified during construction. Mitigation Measure MM 4.5-4 requires appropriate treatment of uncovered archaeological resources, including those that qualify as historical resources. Implementation of these mitigation measures would reduce potential impacts to historical and archaeological resources to a less-than-significant level, and ensure that project impacts to cultural resources are not cumulatively considerable. Although project construction has the potential to disturb human remains, as do other projects in the cumulative study area, the implementation of Mitigation Measure MM 4.5-5 would ensure that appropriate laws and protocols are followed with regard to identifying and handling remains, and ensure that cumulative impacts are not significant.

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5, as described above, the project would not result in significant impacts to cultural resources. Given this minimal impact, as well as similar mitigation requirements for other projects in the western Antelope Valley, cumulative impacts to cultural resources would be less than significant.

Mitigation Measures

Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5, impacts would be less than significant.

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4.6.1 Introduction

This energy section of the EIR analyzes the energy implications of the project, focusing on the following three energy resources: electricity, natural gas, and transportation-related energy (petroleum-based fuels). This section includes a summary of the project's anticipated energy needs (detailed energy calculations are contained in Appendix F of this Draft EIR), and conservation measures. Information in this section is primarily based on the *Energy Consumption Technical Report for the Sanborn Solar Project, Kern County, California* (Energy Technical Memorandum) prepared by Dudek, provided in Appendix F of this Draft EIR. In addition, the information found herein, as well as other aspects of the project's environmental-related energy impacts, are discussed in greater detail elsewhere in this Draft EIR, including in Chapter 3, *Project Description*, Section 4.3, *Air Quality*, and Section 4.8, *Greenhouse Gas Emissions*, of this Draft EIR.

This section provides the content and analysis required by Public Resources Code, Section 21100(b)(3), and described in Appendix F to the CEQA *Guidelines* (AEP, 2018). Public Resources Code Section 21100(b) and Section 15126.4 of the CEQA *Guidelines* require that an EIR identify mitigation measures to minimize a project's significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F states that the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the Project Description, Environmental Setting, and Impact Analysis portions of technical sections, as well as through mitigation measures and alternatives.

In late 2018, the California Natural Resources Agency finalized updates to the 2018 CEQA *Guidelines* (California Natural Resources Agency, 2018). Appendix G was amended to now include the analysis of energy. Previously included in Appendix F, the Appendix G Checklist now provides energy criteria for the analysis of wasteful energy consumption and conflicts with state or local energy efficiency plans (California Natural Resources Agency, 2018).

4.6.2 Environmental Setting

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components for distribution and use. The electricity generated is distributed through a network of transmission and distribution lines, commonly called a power grid.

Energy capacity, or electrical power, is generally measured in watts (W), while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep

the bulb on for 1 hour would be 100 Wh. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

According to the U.S. Energy Information Administration (EIA), California used approximately 257,268 gigawatt hours of electricity in 2017 (EIA, 2019a). The sector-specific breakdown for energy consumption in 2017 indicates that commercial uses utilized 46 percent of the state's electricity, followed by 35 percent for residential uses, and 19 percent for industrial uses (EIA, 2019a). Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA, 2018a).

Southern California Edison (SCE) provides electricity to the project site. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across Central and Southern California. SCE receives electric power from a variety of sources.

SCE updates all load forecasts for gas and electricity services every year. Load growth forecasts for the project area are currently determined using load growth projection tools that use a number of sources of data, including past peak loading, population, development characteristics, and temperature history information. **Table 4.6-1, *Electric Power Mix Delivered to Retail Customers in 2018***, shows the electric power mix that was delivered to retail customers for SCE compared to the statewide power mix for 2018, the most recent year in which data is available.

TABLE 4.6-1: ELECTRIC POWER MIX DELIVERED TO RETAIL CUSTOMERS IN 2018

Energy Resource	2018 SCE	2017 CA Power Mix (for comparison)
Eligible Renewable	36%	31%
• Biomass & bio-waste ^a	1%	2%
• Geothermal	8%	5%
• Small hydroelectric	1%	2%
• Solar	13%	11%
• Wind	13%	11%
Coal	0%	3%
Large Hydroelectric	4%	11%
Natural Gas	17%	35%
Nuclear	6%	9%
Other	0%	0%
Unspecified sources of power^b	37%	11%
Total	100%	100%

^a The Eligible Renewables category is further delineated into the specific sources: biomass & waste, geothermal, small hydroelectric, solar, and wind

^b "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

SOURCES: SCE 2019.

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs and delivered through high-pressure transmission pipelines.

According to the EIA, California used approximately 2,110,829 million cubic feet of natural gas in 2017 (EIA, 2019b). The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers accounted for approximately 30 percent of the natural gas delivered by California utilities in 2017. Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 70 percent of the natural gas delivered by California utilities in 2017 (EIA, 2019b). While the supply of natural gas in the United States and production in the lower 48 states has increased greatly since 2008, California produces little, and imports 90 percent of its supply of natural gas (EIA, 2019b).

Natural gas is measured in terms of cubic feet (cf). Southern California Gas Company (SoCalGas) is the natural gas provider in Kern County; however, there is not a known natural gas service for the project site. SoCalGas' service territory encompasses approximately 20,000 square miles and more than 500 communities. In the California Energy Demand mid-energy demand scenario, natural gas demand is projected to have an annual growth rate of 0.03 percent in SoCalGas' service territory. As of 2017, approximately 7,206 million therms¹ were used in SoCalGas' service area per year. Around the estimated time of project completion in 2020, natural gas demand is anticipated to be approximately 7,388 million therms per year in SoCalGas' service area (CEC 2014). The total capacity of natural gas available to SoCalGas in 2016 is estimated to be 3.9 billion cubic feet per day. In 2020, the total capacity available is also estimated to be 3.9 billion cubic feet per day² (California Gas and Electric Utilities, 2016). This amount is approximately equivalent to 3.98 billion thousand British thermal units (kBtu) per day or 39.8 million therms per day. Over the course of a year, the available capacity would therefore be 14.5 billion therms per year, which is well above the existing and future anticipated natural gas demand in SoCalGas' service area.

Transportation

California used approximately 18.6 billion gallons of petroleum in 2017 (EIA, 2019c). The majority of California's petroleum customers are residential and small commercial customers (core customers). This equates to a daily use of approximately 51 million gallons of petroleum. By sector, transportation uses utilize approximately 85.5 percent of the state's petroleum, followed by 11.1 percent from industrial, 2.5 percent from commercial, 0.9 percent from residential, and 0.01 percent from electric power uses (EIA, 2018b). In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, diesel fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gas (GHG) from the transportation sector, and reduce vehicle miles traveled (CEC, 2016a). The California Energy Commission (CEC) predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of

¹ One therm is equal to 100,000 Btu or 100 kBtu.

² One cubic foot of natural gas has approximately 1,020 Btu of natural gas or 1.02 kBtu of natural gas.

alternative fuels (CEC, 2016b). According to the California Air Resources Board's (CARB) EMFAC2017 Web Database, Kern County on-road transportation sources consumed approximately 454 million gallons of gasoline and 308 million gallons of diesel fuel in 2018 (CARB, 2019).

4.6.3 Regulatory Setting

Federal

Corporate Average Fuel Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and United States Environmental Protection Agency (USEPA) jointly administer the CAFE standards (NHTSA, 2019). The U.S. Congress has specified that CAFE standards must be set at the “maximum feasible level” with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. USEPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA and NHTSA, 2016).

Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act was passed to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve the energy performance of the federal government; and increase U.S. energy security, develop renewable fuel production, and improve vehicle fuel economy. The act included the first increase in fuel economy standards for passenger cars since 1975, and also included a new energy grant program for use by local governments in implemented energy-efficiency initiatives, as well as a variety of green building incentives and programs.

State

Senate Bill 1389

Senate Bill (SB) 1389 (Public Resources Code Sections 25300–25323; SB 1389) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (Public Resources Code Section 25301(a)). The

2016 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California including energy efficiency, strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan, building energy efficiency standards, the impact of drought on California's energy system, achieving 50 percent renewables by 2030, the California Energy Demand Forecast, the Natural Gas Outlook, the Transportation Energy Demand Forecast, Alternative and Renewable Fuel and Vehicle Technology Program benefits updates, update on electricity infrastructure in Southern California, an update on trends in California's sources of crude oil, an update on California's nuclear plants, and other energy issues.

California's Renewables Portfolio Standard

First established in 2002 under SB 1078, California's Renewables Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030 (CPUC, 2019).

In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy. Refer to Section 4.8, *Greenhouse Gas Emissions*, of this Draft EIR for additional details regarding this regulation.

California Assembly Bill 1493 (AB 1493, Pavley)

In response to the transportation sector accounting for more than half of California's CO₂ emissions, Assembly Bill (AB) 1493 (commonly referred to as CARB's Pavley regulations), enacted in 2002, requires CARB to set GHG emission standards for new passenger vehicles, light-duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009–2016 and Phase II established standards for model years 2017–2025 (CARB, 2017). Refer to Section 4.8, *Greenhouse Gas Emissions*, of this Draft EIR for additional details regarding this regulation.

California Health and Safety Code (HSC), Division 25.5/California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32 (codified in the California HSC, Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. Under HSC Division 25.5, CARB has the primary responsibility for reducing the State's GHG emissions; however, AB 32 also tasked the CEC and the CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

In 2016, SB 32 and its companion bill AB 197 amended HSC Division 25.5, established a new climate pollution reduction target of 40 percent below 1990 levels by 2030, and included provisions to ensure that the benefits of state climate policies reach into disadvantaged communities. Refer to Section 4.8, *Greenhouse Gas Emissions*, of this Draft EIR for additional details regarding these regulations.

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS), established in 2007 through Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products, starting with 0.25 percent in 2011 and culminating in a 10-percent total reduction in 2020. Petroleum importers, refiners and wholesalers can either develop their own low carbon fuel products, or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas and hydrogen.

California Air Resources Board

CARB's Advanced Clean Car Program

The Advanced Clean Cars emissions-control program was approved by CARB in 2012 and is closely associated with the Pavley regulations. The program requires a greater number of zero-emission vehicle models for years 2015 through 2025 to control smog, soot and GHG emissions. This program includes the Low-Emissions Vehicle (LEV) regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles; and the Zero-Emissions Vehicle regulations (ZEV) to require manufactures to produce an increasing number of pure ZEV's (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEV) between 2018 and 2025.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted an Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling in order to reduce public exposure to diesel particulate matter emissions (Title 13 California Code of Regulations [CCR] Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than five minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles

In addition to limiting exhaust from idling trucks, in 2008, CARB approved the Truck and Bus regulation to reduce nitrogen oxides (NO_x) and particulate matter (PM₁₀ and PM_{2.5}) emissions from existing diesel vehicles operating in California (13 CCR, Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. The phasing of this regulation has full implementation by 2023.

CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007 aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

California Environmental Quality Act

In accordance with CEQA and Appendix F, Energy Conservation, of the 2018 CEQA *Guidelines*, and to assure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the CEQA *Guidelines* provides a list of energy-related topics to be analyzed in the EIR. In addition, while not described or required as significance thresholds for determining the significance of impacts related to energy, Appendix F provides the following topics for consideration in the discussion of energy use in an EIR, to the extent the topics are applicable or relevant to the project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;
- The effects of the project on local and regional energy supplies and on requirements for additional capacity;
- The effects of the project on peak and base period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources; and
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In late 2018, the California Natural Resources Agency finalized updates to the 2018 CEQA *Guidelines* (California Natural Resources Agency 2018). Appendix G was amended to now include the analysis of energy. Previously included in Appendix F, the Appendix G Checklist now provides energy criteria for the analysis of wasteful energy consumption and conflicts with state or local energy efficiency plans (California Natural Resources Agency, 2018). Appendix F did not describe or require significance thresholds for determining the significance of impacts related to energy. According to the updated Appendix G Checklist, Issue VI. Energy, a project would have a significant impact on energy and energy resources if it would:

- a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to energy. The policies and goals in the Kern County General Plan related to energy that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

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

1.9 Resources

Goal 4: Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.

Chapter 5. Energy Element

5.4.5. Solar Energy Development

Goal

Goal 1: Encourage safe and orderly commercial solar development.

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The objective, policies, and implementation measure in the Mojave Specific Plan for energy applicable to the project are provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 4. Conservation Element

Objective

Objective 4.3 Encourage conservation of energy resources.

Policies

Policy 4.3.1 Promote energy conservation measures contained in Title 24 of the California Code of Regulations.

Policy 4.6.3 Encourage development designs that promote energy conservation and that minimize the direct and indirect emissions of air contaminants.

Implementation Measure

Implementation Measure N-3a) Review construction plans prior to the issuance of building permits to ensure that energy efficiency requirements of Title 24 of the California Administrative Code are met.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. There are no goals, policies, or implementation measures in the West Edwards Road Settlement Specific Plan that are applicable to energy. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detail and refined manner unique to a smaller area of the County. Since there are no applicable goals, policies, or implementation measures within the West Edwards Road Settlement Specific Plan, refer to the applicable policies, goals, and implementation measures of the Kern County General Plan above.

4.6.4 Impacts and Mitigation Measures

Methodology

This analysis addresses the project's potential energy usage, including electricity, natural gas, and transportation fuel. Energy consumption during both construction and operation is assessed. Specific analysis methodologies are discussed below. The assessment presented herein is based in part on the Energy Technical Memorandum prepared for the project. A full copy of the report is provided in Appendix F of this Draft EIR.

Construction

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate energy consumption from construction of the project. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant and GHG emissions associated with construction activities from a variety of land use projects, such as residential, commercial,

and industrial facilities. CalEEMod input parameters, including the land use type used to represent the project and size, construction schedule, and anticipated construction equipment utilization, were based on information provided by project applicant, or default model assumptions if project specifics were unavailable. Fuel consumption from construction equipment was estimated by converting the total CO₂ emissions from each construction phase to gallons using conversion factors for CO₂ to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO₂ per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO₂ per gallon (The Climate Registry, 2018).

Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the project applicant. For purposes of estimating project energy consumption, and based on information provided by the project applicant, it is assumed that construction of the project would last approximately 18 months. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Perimeter Fence Installation: 5.5 months
- Site Preparation and Grading: 4 months
- Trenching: 15 months
- Solar PV System Installation: 15 months
- Generation Tie-In Installation: 4 months
- Energy Storage System: 8.5 months
- Testing and Commissioning: 4 months
- Site Clean-up and Restoration: 1 month

Several of the construction phases shown above would run concurrently. The commissioning of the solar PV system is not dependent on the energy storage facility being built; therefore, the energy storage facility can be constructed along a concurrent schedule. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. Because the site has a very low slope, mass grading is not proposed under this project. There will be minor grading associated with road building, the energy storage facility and onsite substation phases.

Peak daily construction employees would be approximately 475 (generating 950 one-ways trips) with an average of 300 workers daily. In addition to the 475 maximum daily workers traveling to the site there would be up to 80 truck trips per day at peak construction activity (trenching and system installation phases overlap), as discussed in the Energy Technical Memorandum provided in Appendix F of this Draft EIR. A total of up to 160 trips per day are anticipated during peak construction activities. Delivery of material and supplies would reach the site via on-road truck delivery via State Route (SR)-14 or SR-58. The majority of the truck deliveries would be for the PV system installation, as well as any aggregate material that may be required for road base.

Detailed construction equipment mix and vehicle trips are found in Appendix F of this Draft EIR.

Water consumption during construction is estimated to be approximately 200 acre-feet (AF) for dust suppression and earthwork over an approximately 18-month period. Panel rinsing is expected to be conducted once at the end of the construction process. Construction water for panel rinsing would be provided by onsite groundwater through use of an existing well or improvements to an existing well or a

new well permitted and drilled (if necessary). Currently the depth and location of the potential well are unknown therefore electricity demand calculations could not be calculated.

Operation

Energy consumption from the operational phase of the project were estimated using the CalEEMod version 2016.3.2 and include, electricity, natural gas and petroleum use.

Electricity and natural gas would be required for multiples including but not limited to operation of heating, ventilation, and air conditioning equipment (HVAC), inverters, storage equipment and the Operations and Maintenance (O&M) building. The groundwater well pumps would likely be operated by electricity; however, from an energy demand perspective a worst-case assumption has been used consisting of a diesel generator. The generator emits criteria pollutants from the combustion of diesel fuel. The generator will be regulated by an operating permit under the Eastern Kern Air Pollution Control District's (EKAPCD) Rule 1160 for Internal Combustion Engines. Panel rinsing is expected to be conducted up to four times annually as performance testing and weather and site conditions dictate. Energy use was provided by the applicant for security lighting, water pumping and any ancillary use for the energy storage facility.

Petroleum fuel consumption for the project would primarily associated with be motor vehicles (automobiles and light-duty trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. Based on conservative estimates for vehicular travel, the project is anticipated to have up to 5,326 trips per year during operation, accounting for the commutes and performance of regular inspection and maintenance activities by six full-time-equivalent staff.

Thresholds of Significance

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

- a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Project Impacts

Impact 4.6-1: The project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Construction

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers, and heating, ventilation, and air conditioning) would be provided by SCE. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and several construction trailers by managerial staff during the hours

of construction activities. The electricity used for construction activities would be temporary and minimal; therefore, impacts would be less than significant.

Natural gas is not anticipated to be required during construction of the project. Any minor amounts of natural gas that may be consumed as a result of project construction would be temporary and negligible, and would not have an adverse effect; therefore, impacts would be less than significant.

Petroleum would be consumed throughout construction of the project. The majority of the energy used during construction would be from petroleum. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and vehicle miles-traveled (VMT) associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities, and onsite haul trucks involved in relocating dirt around the project site would rely on diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed that construction workers would travel to and from the project site in gasoline-powered vehicles.

Construction and decommissioning of the new solar energy generation facility is expected to require the use of non-renewable resources in the form of gasoline and diesel to power off-road construction equipment and on-road vehicles. Fuel consumption from construction equipment was estimated by converting the total CO₂ emissions from each construction phase to gallons using conversion factors for CO₂ to gallons of gasoline or diesel. Fuel consumption from worker and vendor trips was estimated by converting the total CO₂ emissions from the construction phase to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline fueled, and vendor vehicles are assumed to be diesel fueled. Additionally, the project soil use is anticipated to be balanced onsite and not require intensive use of haul trucks for the import or export of earthwork material.

Table 4.6-2, *Project Construction Transportation Fuel Usage*, provides the estimated gasoline and diesel fuel use from construction equipment during construction of the project. As shown therein, construction activities are expected to consume approximately 622,008.91 gallons of gasoline and 109,418.18 gallons of diesel. This is 0.14 percent of Kern County's annual gasoline fuel use in 2018 and 0.04 percent of Kern County's annual diesel fuel use in 2018, respectively.

TABLE 4.6-2: PROJECT CONSTRUCTION TRANSPORTATION FUEL USAGE

Source	Total Gallons of Gasoline Fuel	Total Gallons of Diesel Fuel
Kern County (2018)	454,498,680	308,064,466
Construction		
Vendor and Haul Trucks	—	8,310.3
Workers	622,008.92	—
Equipment	—	101,107.88
Total	662,008.92	109,418.18
Percent of County	0.14%	0.04%
SOURCE: Dudek 2019; ESA 2019.		

Energy consumption associated with decommissioning activities are anticipated to be similar to construction activities. The consumption of fuels during construction and decommissioning would be

irreversible. Although construction and decommissioning activities would be temporary, the project could result in a wasteful, inefficient, or unnecessary consumption of energy resources if available control measures are not implemented. The project does not propose any energy control measures during construction. As a result, this impact would be potentially significant. Implementation of Mitigation Measure MM 4.3-1, as provided in Section 4.3, *Air Quality*, of this EIR, would require the use of energy-efficient and alternatively-fueled equipment during project construction. Implementation of Mitigation Measure MM 4.3-1 would also ensure compliance with Title 13, California Code of Regulations, Section 2449 et seq., which imposes construction equipment idling restrictions. Compliance with Title 13 would also help to reduce unnecessary fuel consumption during project construction. With implementation of this mitigation, the project would not result in the wasteful, inefficient, or unnecessary consumption of transportation fuels and impacts would be reduced to less than significant.

Operation

The operational phase would require electricity for multiple purposes including, but not limited to, O&M facility, energy storage facility building heating and cooling, lighting, appliances, and electronics and night time power consumption (i.e., inverter and energy storage facility cooling). The CalEEMod, version 2016.3.2, provides default values for electricity consumption for warehouse land uses that were applied to the project (California Air Pollution Control Officers Association ([CAPCOA], 2017). The electricity use for non-residential buildings was calculated in CalEEMod using energy intensity value (electricity use per square foot per year) assumptions, which were based on the California Commercial End-Use Survey database (CEC, 2006) and information provided by the project applicant.

Natural gas consumption during operation could be required for various purposes, including, but not limited to, building heating and cooling. A heat pump would likely be the preferred method for heating and cooling that would utilize electricity either generated onsite or from the local electrical grid; however, for worst-case energy consumption purposes, natural gas has been assumed to be used for heating and cooling. Default natural gas generation rates in CalEEMod for the proposed land use and climate zone were used.

The fuel consumption resulting from the project's operational phase would be attributable to employees and visitors traveling to and from the project site. Petroleum fuel consumption associated with motor vehicles traveling to and from the project site during operation is a function of VMT. As shown in the Energy Technical Memorandum, the annual VMT attributable to the project is expected to be 166 thousand VMT per year. Similar to construction worker and vendor trips, fuel consumption for operation was estimated by converting the total CO₂ emissions from warehouse land use type to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel.

Energy use associated with long-term operational activities is summarized in **Table 4.6-3, *Project Operational Energy Usage***. As shown, operation of the project would consume approximately 2.82 GWh of electricity, 482,496 thousand British thermal units (kBtu) per year, 11,079.65 gallons of gasoline, and 774.61 gallons of diesel.

TABLE 4.6-3: PROJECT OPERATIONAL ENERGY USAGE

Source	Total Electricity (GWh)	Total Natural Gas (million mmBTU)	Total Gallons of Gasoline Fuel	Total Gallons of Diesel Fuel
CEC (2019); CEC (2018); Kern County (2018)	13,429	2,334	454,498,680	308,064,466
Workers	—	—	11,079.65	774.61
O&M Building	2.82	0.482	—	—
Total	2.82	0.482	11,079.65	774.61
Percent of County	0.02%	0.02%	0.0024%	0.0003%

SOURCE: Dudek 2019; ESA 2019.

As discussed above, the project is estimated to have a total electrical demand of 2.82 GWh per year. The non-residential electricity demand in 2018 was 13,429 GWh for Kern County (CEC, 2019). This is 0.02 percent of the total non-residential electricity demand for Kern County in 2018. The project would be built in accordance with the current Title 24 standards at the time of construction and CALGreen. Additionally, as a renewable energy project, it would provide a net increase in energy available for use within the state. Therefore, due to the limited amount of electricity use compared to that generated by the project, and the inherent nature of the project as a renewable energy development, the project would not result in a wasteful use of energy. Impacts related to operational electricity use would be less than significant.

As calculated in the Energy Technical Memorandum, the project would consume approximately 482,496 kBTU per year of natural gas. The non-residential natural gas consumption in 2018 was 2,334 million MMBtu for Kern County (CEC, 2018). This is 0.2 percent of the non-residential natural gas consumption for Kern County in 2018. The project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains additional energy measures that are applicable to project under CALGreen. Prior to project approval, the applicant would ensure that the project would meet Title 24 requirements applicable at that time, as required by state regulations through their plan review process. Thus, the natural gas consumption of the project would not be considered inefficient or wasteful, and impacts would be less than significant.

As shown in Table 4.6-3, the project would result in 11,079.65 gallons of gasoline and 774.61 gallons of diesel per year, representing a small fraction of a percent of the County's annual gasoline and diesel use, respectively. Over the lifetime of the project, the fuel efficiency of the vehicles being used by the employees and visitors is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB, 2017). As such, operation of the project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

In summary, although the project would increase petroleum use during operation as a result of employees and visitors traveling to and from the project site, the use would be a small fraction of the statewide use and, due to efficiency increases, would diminish over time. Given these considerations, petroleum

consumption associated with the project would not be considered inefficient or wasteful and would result in a less than significant impact.

Mitigation Measures

Implementation of Mitigation Measure MM 4.3-1 would be required (see Section 4.3, *Air Quality*, for text of Mitigation Measure MM 4.3-1).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.3-1, impacts would be less than significant.

Impact 4.6-2: The project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Construction

Construction equipment would comply with federal, State, and regional requirements where applicable. With respect to truck fleet operators, the USEPA and NHTSA have adopted fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type. The energy modeling for trucks does not take into account specific fuel reductions from these regulations, since they would apply to fleets as they incorporate newer trucks meeting the regulatory standards; however, these regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with CARB regulations regarding heavy-duty truck idling limits of five minutes at a location and the phase-in of off-road emission standards that result in an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in the efficient use of construction-related energy.

Operation

In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the 33 percent RPS by 2020 and 50 percent by 2030. In addition, the 2017 Scoping Plan relies on achievement of the RPS target of 50 percent of California's energy coming from renewable sources by 2030. SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the project is reasonably expected to displace region-wide and statewide emissions of GHGs over the expected life of the

project. The reduction in GHG emissions are a direct result of increasing the share of renewable energy available to investor-owned utilities required to meet RPS. The project directly aligns with the goals of RPS by generating 920,400 MWh of renewable electricity annually.

Furthermore, the project would include the development a solar facility and associated infrastructure with the capacity to generate up to 300 MW of renewable electric energy and the installation of an energy storage facility and accessories that would provide energy storage capacity of up to 3 GWh for the electrical grid. As such, the project would be consistent with the Attorney General's recommended measures to reduce GHG emissions. Specifically, the project complies with the Attorney General's Recommended Measure to "Install solar and wind power systems, solar and tank less hot water heaters, and energy-efficient heating ventilation and air conditioning." Therefore, the project would be compliant with the Attorney General's Recommended Measure regarding renewable energy. Because the project is below regional regulatory thresholds and could result in a reduction of GHG emissions, no mitigation measures are required.

With regard to the O&M Building proposed on the project site, this building would be subject to the Building Energy Efficiency Standards as required by the California Code of Regulations, Title 24, Part 6. The Building Energy Efficiency Standards are intended to save energy, increase electricity supply reliability, and avoid the need to construct new power plants. Pursuant to the California Building Standards Code and the Energy Efficiency Standards, the County would review the design components of the project's energy conservation measures when the project's building plans are submitted. These measures could include insulation; use of energy-efficient HVAC; solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; reclamation of heat rejection from refrigeration equipment to generate hot water; incorporation of skylights; and other measures. The project would also be subject to CALGreen, which requires 65 percent construction solid waste diversion

Overall, because one of the objectives of the project is to assist California in meeting its greenhouse gas emissions reduction goals by 2020 and 2030 as required by the California Global Warming Solutions Act (AB 32), as amended by SB 32 in 2016, the project would be compliant with the applicable recommended actions of the CARB Climate Change Scoping Plan, as well as, applicable federal, state and local policies. Specifically, the project would assist the State and regulated utility providers to generate a greater portion of energy from renewable sources consistent with the 2020 and 2030 RPS. Therefore, this impact would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts occur when the incremental effects of a project are significant when combined with similar impacts from other past, present, or reasonably foreseeable projects in a similar geographic area. Of the cumulative projects presented in Chapter 3, *Project Description*, of this Draft EIR, there are 73 projects proposed throughout the Antelope Valley in Kern County and in the desert portion of Kern County outside the Antelope Valley, and an additional 27 projects proposed throughout Lancaster, Palmdale, and

Unincorporated Los Angeles County. Of the approximately 73 total projects in Kern County, 43 would be located within 6 miles of the project site and 35 would be located within 1 mile of the project site. The geographic context for the analysis of cumulative impacts on electricity is SCE's service area because the project and related projects are located within the service boundaries of SCE. The geographic context for the analysis of cumulative impacts on natural gas is SoCalGas's service area because the project and related projects are located within the service boundaries of SoCalGas.

Cumulative projects in the project area listed in Table 3-4 within a 1-mile and 6-mile radius largely consist of utility-scale solar power generation facilities. The nature of these projects is such that, like the project, they would be consistent with the strategies of the Climate Change Scoping Plan. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the RPS target of 33 percent of California's energy coming from renewable sources by 2020. In order to meet the SB 32 GHG emissions reduction mandate, the 2017 Scoping Plan relies on achievement of the RPS target of 50 percent of California's energy coming from renewable sources by 2030. SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The project and other similar projects are essential to achieving the RPS goals.

The main contribution of energy consumption from the project would be from construction equipment usage, haul truck trips, and employee trips during the construction phase and panel washing activities, maintenance trips, and employee trips during project operation of the project as well as electricity and natural gas used for the O&M Building. The project's emissions would, therefore, contribute to the increase in emissions in the transportation sector as well as electricity and natural gas generation sector. Construction emissions would be finite and temporary and would cease at the end of construction activities.

Although the project would result in a contribution to cumulative energy consumption in California, construction of the project would implement Mitigation Measure MM 4.3-1, as provided in Section 4.3, *Air Quality*, of this EIR, would require the use of energy-efficient and alternatively-fueled equipment during project construction. In addition, operation of the project could offset emissions from the electricity generation sector estimated at 920,400 MWh of renewable electricity annually. As stated above, a majority of the related projects within a 1-mile and 6-mile radius are solar or wind farms that would have similar energy use that would be offset by renewable energy generation, would generate a marginal demand of natural gas, and would have minimal operational trips to and from the sites. Overall, the project clearly would not contribute to cumulative energy consumption in California because operation of the project would provide electric power with negligible operational energy consumption over the long term when compared to traditional fossil-fueled generation technologies. Thus, the project would not have a cumulatively considerable impact on energy consumption, would not conflict with any renewable energy plans, and cumulative impacts would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.3-1 would be required (see Section 4.3, *Air Quality*, for text of Mitigation Measure MM 4.3-1).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.3-1, impacts would be less than significant.

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4.7.1 Introduction

This section of the EIR describes the geologic and soil characteristics of the project site and potential geology and soils impacts associated with construction and operation of the project and mitigation measures that would reduce these impacts, if applicable. The analysis in this section is largely based on the Geotechnical Study (Ninyo & Moore, 2018) and the Paleontological Resources Assessment report (Dudek, 2019), both prepared for the project site. These reports are included in Appendix G1 and G2 of this EIR.

4.7.2 Environmental Setting

Regional Geologic Setting

The project sites are all located in the western portion of what is known as the Mojave Desert Geomorphic Province. The geologic features of this province are characterized by isolated mountains separated by vast desert plains which contain enclosed drainage basins (no drainage outlet to the ocean). The province is bounded by predominate northwest-southeast faults trends of the San Andreas Fault and a secondary east-west fault trend of the Garlock Fault that create a wedged shape (CGS, 2002). The Garlock Fault is a major strike-slip fault in southern California that clearly marks the northern boundary of the Mojave province and the southern ends of the Sierra Nevada (SCEDC, 2018a). The San Andreas Fault is the master fault of an intricate fault network cutting through the California coastal region; the fault extends from northern California to the San Bernardino area of southern California (SCEDC, 2018b). The project site is not intersected by any known faults, but is located in a region considered seismically active (Ninyo & Moore, 2018).

Paleontological Setting

Paleontological resources are the mineralized (fossilized) remains of prehistoric plants and animals and the mineralized impressions (trace fossils) left as indirect evidence of the forma and activity of such organisms. These resources are located within sedimentary rocks or alluvium and are considered to be nonrenewable.

Formations that contain vertebrate fossils are considered more sensitive because vertebrate fossils tend to be rare and fragmentary. Formations containing microfossils, plant casts, and invertebrate fossils are more common. A significant fossil deposit is a rock unit or formation that contains significant nonrenewable paleontological resources. This is defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces, and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals such as trackways or nests and middens), which provide datable material and climatic information. This definition excludes invertebrate or botanical fossils except when present within a given vertebrate assemblage. However, invertebrate and botanical fossils may be significant as environmental indicators associated with vertebrate fossils.

Surficial geological mapping indicates the majority of the project area is underlain by Holocene (< 12,000 years ago) Quaternary alluvium (map unit Qa) and Quaternary sand deposits (map unit Qs), with smaller amounts of Quaternary older (>12,000 years ago) alluvium (map unit Qoa). Elevated areas (e.g., Lookout Hill) are underlain by the late Miocene (~12–5 million years ago) Bobtail Quartz Latite Member of the Gem Hill Formation (map units Tlf, Tgf, and Tlp) (Dudek, 2019).

Due to their young age, Quaternary alluvial and sand deposits have low paleontological sensitivity on the surface, but increase to high sensitivity with depth where older alluvial deposits and paleosols (fossil soil horizons) can be encountered (Dudek, 2019). Oftentimes, paleosols are not mapped on the surface or lie just below a thin layer of alluvial or aeolian sediments and are known to produce significant fossil vertebrates in the Mojave and Colorado Deserts (Dudek, 2019). Quaternary older alluvium, which is mapped in the northwestern terminus of the gen-tie line, in the vicinity of the Westwind Substation, has high paleontological sensitivity. The Gem Hill Formation igneous rocks, where present, have no paleontological sensitivity.

In a compilation of Quaternary (Pleistocene and Holocene) vertebrate fossils from California reviewed for the assessment report, several Pleistocene vertebrate fossil localities were identified from the Mojave Desert in Kern County in the region of the project site (Dudek, 2019). The closest locality, near the intersection of Rosamond Boulevard and 25th Street approximately 8.5 miles southwest of the southernmost boundary of the project site, produced fossil specimens of mammoth, horse, and bison. The Clay Mine Road, Lake Thompson locality and the Rogers Lake, Edwards Air Force Base, Lake Thompson Locality, yielded fossil lizard, snake, bird, and mammal specimens. Of these specimens, several extinct taxa were recovered, including possible mammoth specimens and camels (Dudek, 2019).

Existing Paleontological Resources

The paleontological resources inventory conducted by Dudek (2019) included a geologic map review, a literature search, a record search conducted by the Natural History Museum of Los Angeles County (LACM), and a field survey. As mentioned, the geologic map and literature review indicates the project site is largely underlain by Holocene-aged Quaternary alluvium (Qa).

The LACM records search conducted for the project indicates no vertebrate fossil localities have been previously recorded within the project site. While no paleontological localities were reported from the project site, the LACM reported several fossil localities within the area from the same or similar deposits that underlie the project site. The closest LACM fossil locality is LACM 7891, which consists of a fossil camel (*Hemiauchenia*), recovered south-southwest of the westernmost project area near the California Aqueduct west and southwest of Soledad Mountain (Dudek, 2019). LACM 3722, which is the next closest vertebrate fossil locality, produced a fossil horse (*Equus*) during excavations for a sewer line within the city of Tehachapi. Two localities south of the project area and north of Lancaster (LACM 7853 and 7884) yielded an abundance of small fossil vertebrates including snakes, lizards, rabbits, rats, mice, gopher, and squirrel in addition to camels (Dudek, 2019). While the LACM acknowledged the presence of Quaternary alluvium throughout the majority of the project area and the low paleontological sensitivity of the geological unit, paleontological monitoring was recommended for substantial excavations that may extend into older Quaternary alluvium, along with sediment sampling to determine the presence of microvertebrate fossils. Due to the extremely unlikely chance of recovering recognizable fossils in igneous rocks, no monitoring was recommended for excavations into areas of the project underlain by the Gem Hill Formation (Dudek, 2019).

A paleontological resources survey was conducted in October 2018 to identify fossil resources exposed at the surface within the project site, as well as to field verify the geological units mapped within the project site. The field survey confirmed the presence of Holocene-aged Quaternary alluvium and Pleistocene-aged older alluvium within the project site. The paleontological resources survey coincided with archaeological excavations conducted by Dudek for the proposed project. During the paleontological resources survey, archaeological excavation units were also examined and were found to contain moderately indurated, reddish brown, silty sands approximately one foot below the ground surface. These deposits are indicative of older, potentially fossil-bearing sediments (Dudek, 2019).

Local Geologic Setting

Fault Rupture

Ground surface rupture along an earthquake fault may cause damage to aboveground infrastructure and other features and occurs when movement on a fault deep within the earth breaks through to the surface. Fault rupture is considered to be most likely to occur along the identified traces of active faults (Bryant and Hart, 2007). Active faults are defined as faults with evidence of displacement in the last 11,000 years. As described above, there are no active faults that intersect the project sites nor are any located within the immediate vicinity. The nearest Earthquake Fault Zone as delineated by the Alquist-Priolo Earthquake Fault Zoning Act, is associated with the Garlock fault and is approximately 9.5 miles from the project site (Ninyo & Moore, 2018) and approximately 4.30 miles northwest of the western extent of the gen-tie line.

Ground Shaking

Faults located within the project site vicinity have the potential to cause ground shaking to occur on the project site; the magnitude of ground shaking experienced onsite is dependent on the distance to causative faults and the earthquake magnitude (or measure of the amount of energy released during an earthquake event). **Table 4.7-1, *Historic Earthquakes in Project Area Vicinity***, shows some of the significant historical earthquakes that have occurred in the region and their magnitude.

TABLE 4.7-1: HISTORIC EARTHQUAKES IN PROJECT AREA VICINITY

Earthquake (Year)	Approximate Distance to Site (miles)	Earthquake Magnitude
Mojave (1992)	35	5.7
Tejon Ranch (1988)	25	5.4
Kern County (1952)	35	7.5
Ridgecrest (2019)	48	7.1, 6.4, and 5.4
SOURCE: SCEDC, 2018c and SCEDC, 2020.		

The fault with likely the most potential to effect the site from a design standpoint, is the Garlock Fault due to its location and earthquake magnitude potential. The Garlock Fault has a maximum moment magnitude earthquake potential of 7.1 which is enough to cause substantive groundshaking at the site. However, seismic events on other active faults of the region would also have the potential to cause groundshaking at the project site.

Landslides

The project site is relatively flat with no substantive slopes and is not expected to have any landslide potential (Ninyo & Moore, 2018).

Liquefaction and Lateral Spreading

Liquefaction is a type of ground failure resulting from the generation of high porewater pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. Liquefaction potential is considered highest when saturated loose soils are found within 50 feet of ground surface. Based on the documented depth of groundwater and subsurface conditions, the potential for liquefaction at the project site is considered low (Ninyo & Moore, 2018). Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also considered low (Ninyo & Moore, 2018).

Soil Erosion

Soil erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind and subsurface water flow. Excessive soil erosion can eventually lead to damage of building foundations and roadways. In general, areas that are most susceptible to erosion are those that would be exposed during the construction phase when earthwork activities disturb soils and require stockpiling. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or slope protection, however changes in drainage patterns can also cause areas to be susceptible to the effects of erosion. There are many factors contributing to soil erosion. High soil erodibility contributes to high erosion rates. Soils containing high silt content have the highest soil erodibility since they are easily detached, tend to crust and produce high rates of runoff (MSU, 2018a). Coarse textured soils, or sandy soils, are easily detached but typically do not produce a lot of runoff, so they have low soil erodibility.

Eight different soils types have been mapped on site according to the Natural Resources Conservation Service (Ninyo & Moore, 2018). These soil units include the Arizo Gravelly Loamy Sand, Cajon Sand, Cahon Loamy Sand, Cahon Gravelly Loamy Sand, Garlock Loamy Sand, Rosamond Clay Loam, Torriorthents-Rock Outcrop Complex, and general Rock Outcrops. According to the geology report prepared for the project site, the pre-existing native soils at the site are presumed to have been removed and/or disturbed (Ninyo & Moore, 2018). However, the soils onsite are considered susceptible to the effects of wind and water erosion currently.

Subsidence

Subsidence is the sinking of the ground surface; there are four types of subsidence that are currently occurring within Kern County. Tectonic subsidence refers to the long-term slow sinking of the land surface. Subsidence can also occur naturally when moisture-deficient soils are exposed to water, which causes collapse. Subsidence has also been caused by human activities including the extraction of oil and gas and the withdrawal of groundwater. Specific areas identified as experiencing subsidence within the County include the San Joaquin Valley, a large area south of Bakersfield and also areas south of the project site near Rosamond and Lancaster (Ninyo & Moore, 2018). There is no known evidence of subsidence at the project site nor was there any evidence of associated fissures or cracking during the field reconnaissance (Ninyo & Moore, 2018).

Soil Collapse

Collapsible soils consist of loose, dry, low-density materials that collapse, compact and change in settlement under the addition of water or excessive loading, often resulting in severe damage to structures. These soils are distributed throughout the southwestern United States, specifically in areas of young alluvial fans, debris flow sediments, and loess (wind-blown sediment) deposits. Surface soils on the project site include alluvium, agricultural topsoil and igneous rocks and while they be insufficient to support new loadings (weight of improvements), they were not identified as susceptible to collapse (Ninyo & Moore, 2018).

Expansive Soils

Expansive soils contain clay types capable of absorbing water in a manner that results in volumetric changes. Over long term periods of cyclical changes in water content, these volumetric changes can end up causing damage to foundations, retaining walls, sidewalks, and roadways. According to the preliminary geotechnical investigation and data from a nearby site, the soils expected at the near surface of the site are likely to have a moderate expansion potential (Ninyo & Moore, 2018).

4.7.3 Regulatory Setting

Geologic resources and geotechnical hazards are governed primarily by local jurisdictions. The conservation elements and seismic safety elements of city and county general plans contain policies for the protection of geologic features and avoidance of hazards.

The California Environmental Quality Act (CEQA) is the major environmental statute that guides the design and construction of projects on nonfederal lands in California. This statute establishes a specific process for environmental impact analysis and public review. In addition, the project proponent must comply with other applicable federal, State, and local statutes, regulations, and policies. Relevant and potentially relevant statutes, regulations, and policies are discussed below.

Federal

Clean Water Act (Erosion Control)

The Federal Clean Water Act (CWA) (33 USC 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint-source discharges to surface water. Such discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). Projects that disturb 1 acre or more are required to obtain NPDES coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit), Order No. 2009-0009-DWQ. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which includes best management practices (BMPs) to regulate stormwater runoff, including measures to prevent soil erosion. Requirements of the CWA and associated SWPPP are described in further detail in Section 4.9, *Hydrology and Water Quality*.

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 to “*reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program.*” To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by NEHRP, which refined the description of agency responsibilities, program goals, and objectives.

NEHRP’s mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the project would be required to adhere.

Paleontological Resources

A variety of federal statutes specifically address paleontological resources. They are generally applicable to a project if that project includes federally owned or federally managed lands or involves a federal agency license, permit, approval, or funding. The first of these is the Antiquities Act of 1906 (54 U.S.C. 320301–320303 and 18 U.S.C. 1866(b)), which calls for protection of historic landmarks, historic and prehistoric structures, as well as other objects of historic or scientific interest on federally administered lands, the latter of which would include fossils. The Antiquities Act both establishes a permit system for the disturbance of any object of antiquity on federal land and also sets criminal sanctions for violation of these requirements. The Antiquities Act was extended to specifically apply to paleontological resources by the Federal-Aid Highways Act of 1958. More recent federal statutes that address the preservation of paleontological resources include the National Environmental Policy Act, which requires the consideration of important natural aspects of national heritage when assessing the environmental impacts of a project (P.L. 91-190, 31 Stat. 852, 42 U.S.C. 4321–4327). The Federal Land Policy Management Act of 1976 (P.L. 94-579; 90 Stat. 2743, U.S.C. 1701–1782) requires that public lands be managed in a manner that will protect the quality of their scientific values, while Title 40 Code of Federal Regulations Section 1508.2 identifies paleontological resources as a subset of scientific resources. The Paleontological Resources Preservation Act (Title VI, Subtitle D of the Omnibus Land Management Act of 2009) is the primary piece of federal legislation.

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act offers provisions of paleontological resources identified on federal, Native American, or state lands and guidance for their management and protection, and promotes public awareness and scientific education regarding vertebrate fossils. The law also requires federal agencies to develop plans for inventory, collection, and monitoring of paleontological resources and establishes stronger criminal and civil penalties for the removal of scientifically significant fossils on federal lands.

State

The Alquist-Priolo Earthquake Fault Zoning Act of 1972

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act), regulates the development and construction of buildings intended for human occupancy to avoid hazards associated with surface fault rupture. In accordance with this law, the California Geological Survey maps active faults and designates Earthquake Fault Zones along mapped faults. This act groups faults into categories (i.e., active, potentially active, or inactive). Historic and Holocene faults are considered active, Late Quaternary and Quaternary faults are considered potentially active, and pre-Quaternary faults are considered inactive. These classifications are qualified by conditions. For example, a fault must be shown to be “sufficiently active” and “well defined” through detailed site-specific geologic explorations to determine whether building setbacks should be established. Any project that involves the construction of buildings or structures for human occupancy, such as an operations and maintenance building, is subject to review under the Alquist-Priolo Earthquake Fault Zoning Act, and any structures for human occupancy must be located at least 50 feet from any active fault.

The Seismic Hazards Mapping Act of 1990

In accordance with PRC Chapter 7.8, Division 2, the California Geological Survey (CGS) is directed to delineate seismic hazard zones. The purpose of the act is to reduce the threat to public health and safety and minimize the loss of life and property by identifying and mitigating seismic hazards, such as those associated with strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes. Cities, counties, and State agencies are directed to use seismic hazard zone maps developed by the California Geological Survey in their land use planning and permitting processes. In accordance with the Seismic Hazards Mapping Act, site-specific geotechnical investigations must be performed prior to permitting most urban development projects within seismic hazard zones.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress facilities, and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2016 edition of the CBC is based on the 2015 International Building Code (IBC) published by the International Code Council. The code is updated triennially, and the 2016 edition of the CBC was published by the California Building Standards Commission in 2016, and took effect starting January 1, 2017. The 2019 CBC is anticipated to become effective on January 1, 2020. The 2016 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-10,

Minimum Design Loads for Buildings and Other Structures, provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such as wind loads) for inclusion into building codes. A load is the overall force to which a structure is subjected in supporting a weight or mass, or in resisting externally applied forces. Excess load or overloading may cause structural failure. Seismic design provisions of the building code generally prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of the dead and live loads of the structure, which the structure then must be designed to withstand. The prescribed lateral forces are generally smaller than the actual peak forces that would be associated with a major earthquake. Consequently, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a structure designed in accordance with the seismic requirements of the CBC should not collapse in a major earthquake.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a seismic design category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Seismic design specifications are determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Chapter 18 also describes analysis of expansive soils and the determination of the depth to groundwater table. Expansive soils are defined in the CBC as follows:

1803.5.3 Expansive Soil. In areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. Soils meeting all four of the following provisions shall be considered expansive, except that tests to show compliance with Items 1,2 and 3 shall not be required if the test prescribed in Item 4 is conducted:

1. Plasticity index (PI) of 15 or greater, determined in accordance with ASTM D 4318.
2. More than 10 percent of the soil particles pass a No. 200 sieve (75 micrometers), determined in accordance with ASTM D 422.
3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D 422.
4. Expansion index greater than 20, determined in accordance with ASTM D 4829.

Public Resources Code Section 5097.5 and Section 30244

Other state requirements for paleontological resource management are included in Public Resources Code (PRC) Section 5097.5 and Section 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, in cooperation with the CWA, established the SWRCB. The SWRCB and the nine RWQCBs are responsible for protecting California's surface water and groundwater supplies. Section 13000 of the act directs each RWQCB to develop Water Quality Control Plans for all areas in its region, to designate the beneficial uses of California's rivers and groundwater basins; these plans are the basis for each board's regulatory program.

The Basin Plan gives direction on the beneficial uses of state waters in Region 7, describes the water quality that must be maintained to support such uses, and includes programs, projects, and other actions necessary to achieve the standards established in the Basin Plan. The Colorado River RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges may affect water quality. These requirements are state Waste Discharge Requirements for discharge to land or federally delegated NPDES permits for discharges to surface water. Responsibility for implementing CWA Sections 401–402 and Section 303(d) is also outlined in the Porter-Cologne Water Quality Control Act.

State Regional Water Quality Control Board, Stormwater General Construction Permit

The five-member SWRCB allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine RWQCBs in the major watersheds of the state. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters.

In 1999, the state adopted the NPDES General Permit for Stormwater Discharges Associated with Construction Activities (Construction Activities General Permit) (SWRCB Order No. 2012-0006-DWQ, NPDES No. CAS000002). The General Construction Permit requires that construction sites with 1 acre or greater of soil disturbance, or less than 1 acre but part of a greater common plan of development, apply for coverage for discharges under the General Construction Permit by submitting a Notice of Intent for coverage, developing a stormwater pollution prevention plan (SWPPP), and implementing best management practices to address construction site pollutants.

The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list the best management practices (BMP) the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of BMPs, and a sediment

monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP. Enrollment under the General Construction Permit is through the Stormwater Multiple Application and Report Tracking System. Additionally, the SWRCB is responsible for implementing the CWA and issues NPDES permits to cities and counties through the individual regional boards.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to geology and soils. The policies, goals, and implementation measures in the Kern County General Plan related to geology and soils that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

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

1.3. Physical and Environmental Constraints

Goal

Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.

Policy

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

Implementation Measures

Measure D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.

Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

1.10. General Provisions

1.10.1. Public Services and Facilities

Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

1.10.3. Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Chapter 4. Safety Element

Goal

Goal 1: Minimize injuries and loss of life and reduce property damage.

4.3. Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

Policy

Policy 1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

Implementation Measure

Measure B: Require geological and soils engineering investigations in identifying significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.

Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.

4.5. Landslides, Subsidence, Seiche, and Liquefaction

Policies

Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The objective and policy in the Mojave Specific Plan for geology and soils applicable to the project is provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 9. Seismic and Safety Objectives and Policies

Objective

Objective 9.1 Minimize the potential damage to structures and loss of life that could result from earthquakes.

Policy

Policy 9.1.1 Safety measures required by the Uniform Building Code and the Kern County Seismic Safety Element during construction of new buildings are hereby incorporated by reference.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. The general provision in the West Edwards Road Settlement Specific Plan for paleontological resources applicable to the project is provided below. The West Edwards Road Settlement Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the West Edwards Road Settlement Specific Plan are incorporated by reference.

Chapter 5. General Provisions

General Provisions

Provision 2 Any discretionary development project that substantially disturbs property not previously developed or is not substantially surrounded by development as determined by the Director of Kern County Department of Planning and Development Services shall submit a cultural survey, including archaeological, paleontologic, and historical resources; said survey shall be completed in accordance with any guidelines supplied by the Southern San Joaquin Valley Archaeological Information Center at California State University at Bakersfield. Any Submittal shall also include mitigation measures which satisfactorily address the requirements of said inventory and the Kern County Department of Planning and Development Services.

Kern County Code of Building Regulations (Title 17 of the Ordinance Code of Kern County)

All construction in Kern County is required to conform to the Kern County Building Code (Chapter 17.08, Building Code, of the Kern County Code of Regulations). Kern County has adopted the CBC, 2016 Edition, with some modifications and amendments. The entire County is in Seismic Zone 4, a designation previously used in the Uniform Building Code (UBC) to denote the areas of highest risk for earthquake ground motion. California has an unreinforced masonry program that details seismic safety requirements for Zone 4. Seismic provisions associated with Seismic Zone 4 have been adopted.

Chapter 17.28. Kern County Grading Code

The purpose of the Kern County Grading Code (Chapter 17.28, Building Code, of the Kern County Code of Regulations) sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction. Sections of the Grading Code that are particularly relevant to geology and soils are provided below.

Section 17.28.140. Erosion Control

- A. Slopes. The faces of cut-and-fill slopes shall be prepared and maintained to control erosion. This control may consist of effective planting. Protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.
- B. Other Devices. Where necessary, check dams, cribbing, riprap, or other devices or methods shall be employed to control erosion and provide safety.
- C. Temporary Devices. Temporary drainage and erosion control shall be provided as needed at the end of each work day during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

Section 17.28.170. Grading Inspection

- A. General. All grading operations for which a permit is required shall be subject to inspection by the building official. Professional inspection of grading operations and testing shall be provided by the civil engineer, soils engineer, and the engineering geologist retained to provide such services in accordance with Subsection 17.28.170(E) for engineered grading and as required by the building official for regular grading.
- B. Civil Engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade, and surface drainage of the development area. If revised plans are required during the course of the work, they shall be prepared by the civil engineer.
- C. Soils Engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the building official and the civil engineer.
- D. Engineering Geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.
- E. Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this Code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the building official. In the event of changed conditions, the permittee shall be responsible for informing the building official of such change and shall provide revised plans for approval.
- F. Building Official. The building official may inspect the project at the various stages of the work requiring approval to determine that adequate control is being exercised by the professional consultants.
- G. Notification of Noncompliance. If, in the course of fulfilling their responsibility under this chapter, the civil engineer, the soils engineer, or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the building official. Recommendations for corrective measures, if necessary, shall also be submitted.
- H. Transfer of Responsibility. If the civil engineer, the soils engineer, or the engineering geologist of record is changed during the course of the work, the work shall be stopped until:
 - 1. The civil engineer, soils engineer, or engineering geologist, has notified the building official in writing that they will no longer be responsible for the work and that a qualified replacement has been found who will assume responsibility.
 - 2. The replacement civil engineer, soils engineer, or engineering geologist notifies the building official in writing that they have agreed to accept responsibility for the work.

Kern County Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the applicant to provide background information on construction activities. Applicants must apply for the permit under one of the following four conditions:

1. All stormwater is retained onsite and no stormwater runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.
2. All stormwater runoff is not retained on site, but does not discharge to a Water of the United States (i.e., drains to a terminal drainage facility). Therefore, a SWPPP has been developed and BMPs must be implemented.
3. All stormwater runoff is not retained on site, and the discharge is to a Water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control Board prior to issuance of the building permit. Also, a SWPPP has been developed and BMPs must be implemented.
4. Construction activity is between one to five acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

Kern County Public Health Services Onsite Wastewater Treatment System Permitting

The Kern County Public Health Services Department is responsible for permitting, inspecting, and approving onsite wastewater treatment systems, including septic tank wastewater disposal systems. The agency provides leach line requirements, seepage pit requirements, percolation testing standards, and other regulations for land development related to wastewater treatment systems.

4.7.4 Impacts and Mitigation Measures

Methodology

Potential significant impacts associated with the project site were identified based on a review of available online sources and a Geotechnical Study (Ninyo & Moore, 2018) located in Appendix G1 of this EIR, and the paleontological resources assessment report (Dudek, 2019) located in Appendix G2 of this EIR, which presents findings, conclusions, and recommendations concerning development of the project based on an engineering analysis of geotechnical properties of the subsurface conditions and evaluation of the underlying soils.

The loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. Direct impacts to paleontological resources primarily concern the potential destruction of nonrenewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information (significant impact). At the project-specific level, direct impacts can be mitigated to a less-than-significant level through the implementation of paleontological mitigation.

The CEQA threshold of significance for a significant impact to paleontological resources is reached when a project is determined to “directly or indirectly destroy a significant paleontological resource or unique geologic feature.” In general, for projects that are underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts to paleontological resources. For projects that are directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units which underlie the non-sensitive unit are also affected.

Thresholds of Significance

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

A project would have a significant adverse effect on geology and soils if it would:

- a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - i. 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;
 - ii. Strong seismic ground shaking;
 - iii. Seismic-related ground failure, including liquefaction; or
 - iv. Landslides.
- b. Result in substantial soil erosion or the loss of topsoil;
- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater; or
- f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Project Impacts

Impact 4.7-1: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo earthquake fault zoning map issued by the state geologist for the area or based on other substantial evidence of a known fault.

Primary ground rupture is ground deformation that occurs along the surface trace of the causative fault during an earthquake. The proposed project would introduce structures and people to the project site (construction workers and periodic maintenance workers) and could thus expose people and structures to seismic risks. While the project site is located in the highly seismic southern California region within the influence of multiple faults, none of them are located within or within close proximity to a State of California Alquist-Priolo Earthquake Fault Zone. The nearest Earthquake Fault Zone as delineated by the Alquist-Priolo Earthquake Fault Zoning Act, is associated with the Garlock fault and is approximately 9.5 miles from the project site (Ninyo & Moore, 2018) and approximately 4.30 miles northwest of the western extent of the gen-tie line. Due to the distance from the nearest active fault to the project site, the potential for surface fault rupture at the project site is not likely occur.

In addition, construction of the project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2016 Edition (CCR Title 24). Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with the project. Based on the absence of any known active faults that cross or come anywhere near the project site, and the project compliance with applicable ordinances of the Kern County Building Code, impacts related to fault rupture would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.7-2: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.

As stated previously, the project site is in a highly seismic region that could experience one or more substantive seismic events in the future. Depending on the magnitude, distance to the source, and duration of shaking, damage to the PV modules, the operations & maintenance (O&M) building, or other ancillary facilities and injury to workers or visitors could result. However, because the proposed project would not establish a permanent on-site population beyond the approximate six employees at the O&M facility during operations and maintenance, damage to these on-site structures would not expose a substantial number of people to potential adverse effects due to strong seismic ground shaking.

In addition, prior to the issuance of grading permits, the project proponent would be required to design project infrastructure to withstand substantial ground shaking in accordance with all applicable ordinances of the Kern County Building Code (Chapter 17.08) and the current California Building Code. In addition, as described below, Mitigation Measure MM 4.7-1 requires that a geotechnical study to evaluate soil conditions and geologic hazards be performed by a qualified geotechnical engineer on the project site. Mitigation Measure MM 4.7-2 requires that a California geotechnical engineer be hired by the proponent to design the project facilities to withstand probable seismically induced ground shaking. All grading and construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the seismic recommendations provided by the California-registered professional engineer in accordance with California and Kern County Building Code requirements. The required measures would encompass site preparation, foundation specifications, and protection measures for buried metal. The final structural designs would be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements would be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design would be submitted to the Kern County Planning and Natural Resources Department. Further, the facilities would be constructed in accordance with all applicable codes, which require property line and public roadway setbacks that would protect the general public and onsite staff from potential hazards associated with the facilities that could result from an earthquake. Adherence to the requirements of the Kern County Building Code the CBC and Mitigation Measures MM 4.7-1 and MM 4.7-2 would ensure that seismic hazards would be minimized; impacts related to ground shaking would be less than significant.

Mitigation Measures

MM 4.7.1: Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a 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.

1. The geotechnical study must be signed by a California-registered and licensed professional geotechnical engineer or engineering geologist and must include, but not be limited to, the following:
 - a. Location of fault traces and potential for surface rupture and groundshaking potential;
 - b. Maximum considered earthquake and associated ground acceleration for design;
 - c. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils;
 - d. Stability of any existing or proposed cut-and-fill slopes;
 - e. Collapsible or expansive soils;
 - f. Foundation material type;
 - g. Potential for wind erosion, water erosion, sedimentation, and flooding;
 - h. Location and description of unprotected drainage that could be impacted by the proposed development; and,
 - i. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground.

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 an active fault trace.
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.

MM 4.7-2: Prior to the issuance of grading permits, the project proponent shall retain a California registered and licensed geotechnical engineer to design the project facilities to withstand probable seismically induced ground shaking at the site. All grading and construction 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.

1. The procedures and site conditions shall encompass site preparation, foundation specifications, and protection measures for buried metal.
2. 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.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.7-1 and MM 4.7-2, impacts would be less than significant.

Impact 4.7-3: The project would result in substantial soil erosion or the loss of topsoil.

Construction of the project and associated improvements would involve earth-disturbing activities that could expose soils to the effects of wind or water erosion. Although the project study area consists of relatively flat topography and would not involve substantive cut and fill operations, earthmoving and construction activities could loosen soil, and the removal of existing minimal vegetation could contribute to soil loss and erosion. A SWPPP would be prepared and implemented per the requirements of the NPDES General Construction Permit Program. The SWPPP would detail that existing vegetation and topography are to be preserved to the maximum extent possible. The SWPPP would also specify various types of BMPs including erosion control BMPs to prevent soil from moving offsite; all temporary erosion control measures required by the Kern County Grading Code (Chapter 17.28.140) would be incorporated into the SWPPP (Mitigation Measure MM 4.7-3). Also, per Mitigation Measure MM 4.7-4, the project would be required to submit grading plans accompanied by a soils engineering report, engineering geology report, and drainage calculations pursuant to the Kern County Grading Code (Section 17.28.070) to the Kern County Engineering and Survey Services Department in order to obtain required grading permits. Compliance with Mitigation Measure MM 4.7-4 would ensure that excessive grading does not occur. As a result, project

construction would have less-than-significant impacts related to erosion with implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4.

Project operations would include the periodic cleaning of the panels with water; however, this is not expected to result in soil erosion because infrequency of these activities and limited volumes of water involved; water is expected to infiltrate into the ground and not generate substantial erosion or soil loss. Project operations would not require ground disturbance. As a result, project operation would have a less-than-significant impact with relation to soil erosion.

Mitigation Measures

MM 4.7-3: The construction contractor shall incorporate BMPs consistent with National Pollutant Discharge Elimination System (NPDES) General Construction Permit Program for all construction projects that would not retain all stormwater onsite and the Kern County Grading Code. The project proponent shall prepare an Erosion and Sedimentation Control Plan as well as a Stormwater Pollution Prevention Plan (SWPPP). The plan shall be prepared by a Qualified SWPPP Developer (QSD) and submitted for review and approval by the applicable Regional Water Quality Control Board. The SWPPP BMPs shall include, but not be limited to, the following:

- Scheduling to avoid construction during rain events to the maximum extent possible
- Preservation of existing vegetation and topography to the maximum extent practicable
- Stabilized construction entrances and exits
- Erosion control (including all pertinent temporary erosion control practices as specified in Chapter 17.28.140 of the Kern County Grading Code), such as mulching, temporary drains and cullies, sandbag barrier, geotextiles and mats, silt fences, brush or rock filters, earth dikes, straw bale barriers, and sediment traps
- Sediment control
- Waste management
- Good housekeeping
- Post-construction site stabilization

Prior to initial construction mobilization, preconstruction surveys shall be performed and sediment and erosion controls shall be installed in accordance with the approved SWPPP. A copy of the approved SWPPP shall be submitted to the Kern County Planning and Natural Resources Department.

MM 4.7-4: The project proponent shall limit grading to the minimum area necessary for construction. Prior to the initiation of construction, the project proponent shall retain a California registered and licensed professional engineer to submit final grading earthwork and foundation plans to the Kern County Public Works for approval.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-3 and 4.7-4, impacts would be less than significant.

Impact 4.7-4: The project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

As stated above, the proposed project would result in no impact related to landslides. The geotechnical report prepared for the EIR concluded that the liquefaction potential on the project site is low, largely based on the groundwater depth in the area which is reportedly greater than 100 feet below ground surface. As a result, combined with the relatively flat topography the low liquefaction potential indicates a low potential for lateral spreading. While the preliminary geotechnical report does not discuss the collapse potential at the site, it does describe the surface soils as loose to very dense sand. Therefore, any substantive areas containing loose sands could potentially be susceptible to collapse. Further pre-construction subsurface exploration to confirm the subsurface conditions was recommended in the preliminary geotechnical report. This site-specific exploration would be included as part of the design level geotechnical investigation required by Mitigation Measure MM 4.7-2. The subsurface data would be used to complete the final design of the project and associated structures in consultation with the County in a manner that meets applicable State and County building, grading and construction codes, ordinances and standards. Therefore, since the project site itself has not been identified by the County as being prone to subsidence and the full geotechnical study required by Mitigation Measure MM 4.7-1 would be prepared for the proposed project to identify and remedy any soil conditions considered to be geologic hazards, including liquefaction, collapse and subsidence. Based on the conclusions of the report, recommended mitigation measures would be implemented to minimize geologic hazard-related impacts. With implementation of Mitigation Measures MM 4.7-1 and MM 4.7-2, impacts would be less than significant.

Mitigation Measures

Implementation of Mitigation Measures MM 4.7-1 and MM 4.7-2 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 and MM 4.7-2, impacts would be less than significant.

Impact 4.7-5: The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

The preliminary geotechnical report for the site concluded that based on a previous report for a portion of the site, the underlying soils have a moderate potential for expansion (Ninyo & Moore, 2018). The shrink swell behavior of expansive soils can lead to damage of project improvements over time if not addressed appropriately prior to construction. However, as described above, Mitigation Measure MM 4.7-1 requires that a geotechnical study to evaluate soil conditions and geologic hazards be performed by a qualified geotechnical engineer on the project site. Mitigation Measure MM 4.7-1 requires that a California geotechnical engineer include an evaluation for expansive soils and provide recommendations consistent with CBC requirements to reduce potential adverse effects from expansive soils. All grading and construction onsite would adhere to the

specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the recommendations provided by the California-registered professional engineer in accordance with California and Kern County Building Code requirements. The required measures would encompass site preparation such as treatment of expansive soils or replacement with engineered fill. The final designs would be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements would be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. Therefore, with implementation of Mitigation Measure MM 4.7-1, impacts would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.7-1 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure 4.7-1, impacts would be less than significant.

Impact 4.7-6: The project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.

The project may include a septic system for the O&M Building if portable bathroom facilities to accommodate the 6 onsite employees are not selected for wastewater disposal. A septic system and leach field would be constructed to comply with applicable requirements of the Kern County Environmental Health Services Division. The Environmental Health Services Division's "Standards for Land Development" include the aspects of sewage and preservation of environmental health and include measures to demonstrate the adequate drainage of wastewater prior to project approval. The standards are intended to safeguard the public health and are enforced by the County's Environmental Health Division. Adherence to these County requirements would ensure that soils at the site are capable of adequately supporting the volume of wastewater that would be necessary for project operations. Therefore, impacts related to the onsite soils ability to support the proposed septic system would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.7-7: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, as defined in CEQA Guidelines Section 15064.

Most of the surficial deposits within the project site consist of Holocene-age Quaternary alluvium which is typically not paleontologically sensitive, but may be underlain by older Quaternary alluvium, which has a

higher potential to contain paleontological resources (Dudek, 2019). Based on the paleontological records search performed for the project site, the paleontological reconnaissance, and geological map and paleontological literature review, the project site is considered to have low paleontological sensitivity on the surface in areas mapped as Quaternary alluvium or sand deposits, but that increases to high with depth in areas underlain by Quaternary older alluvium. There is no paleontological sensitivity in areas underlain by igneous rocks of the Gem Hill Formation (Dudek, 2019). If significant vertebrate fossils are encountered during project implementation, disturbance of such resources would result in a potentially significant impact to paleontological resources. Therefore, excavations within older Quaternary alluvium (whether on the surface or encountered underlying younger Quaternary alluvium) could impact significant vertebrate fossil resources and would be considered a potentially significant impact to paleontological resources. However, with implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7, which would require Paleontological Resources Awareness Training for construction workers, use of a qualified paleontological monitor during construction activities, and appropriate treatment of inadvertently uncovered paleontological resources, impacts to paleontological resources would be reduced to less than significant.

Mitigation Measures

MM 4.7-5: The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (SVP, 2010), to carry out all mitigation measures related to paleontological resources.

1. Prior to the start of any ground disturbing activities, the qualified paleontologist shall prepare a Paleontological Resources Awareness Training program for all construction personnel working on the project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training Guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form.
2. Paleontological Resources Awareness Training may be conducted in conjunction with other awareness training requirements.
3. The training shall include an overview of potential paleontological resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources.
4. The Paleontological Resources Awareness Training Guides shall be kept onsite and available for all personnel to review and be familiar with as necessary.

MM 4.7-6: A qualified paleontologist or designated monitor shall be onsite initially to spot-check excavations below a depth of one foot below the ground surface in a given area. If it is determined that sediments consist of older alluvium, then full-time paleontological monitoring shall ensue. If sediments are determined to consist of Holocene Quaternary

alluvium, paleontological monitoring shall be suspended until an excavation depth of five feet below the ground surface is reached in the area.

- a. The duration and timing of monitoring shall be determined by the qualified paleontologist in consultation with the Kern County Planning and Natural Resources Department, and shall be based on a review of geologic maps and grading plans.
 - i. During the course of monitoring, if the paleontologist can demonstrate based on observations of subsurface conditions that the level of monitoring should be reduced, the paleontologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances, as warranted.
- b. Paleontological monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments. The qualified paleontologist shall have authority to temporarily divert excavation operations away from exposed fossils to collect associated data and recover the fossil specimens if deemed necessary.
- c. Following the completion of construction, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources onsite. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, recovery and curation efforts, and the methods used in these efforts, as well as describe the fossils collected and their significance. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to an appropriate repository such as the Natural History Museum of Los Angeles County.

MM 4.7-7: If a paleontological resource is found, the project contractor shall cease ground-disturbing activities within 50 feet of the find. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials. Accompanying notes, maps, and photographs shall also be filed at the repository.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Impacts of the project would be considered cumulatively considerable if they would have the potential to combine with other past, present, or reasonably foreseeable projects to become significant. Cumulative projects listed in Table 3-4 would be subject to relatively similar seismic hazards as that of the proposed project. However, the effects of these projects are not of a nature to cause cumulatively significant effects from geologic impacts or on soils because such impacts are site specific and would only have the potential to combine with impacts of the project if they occurred in the same location as the project.

Development of the project, with implementation of the regulatory requirements discussed above, would result in less-than-significant impacts related to exposing persons or structures to geology, soils, or seismic hazards. Although the entire region is a seismically active area, geologic and soil conditions vary widely within a short distance, making the cumulative context for potential impacts resulting from exposing people and structures to related risks one that is more localized or even site-specific. Similar to the project, other projects in the area would be required to adhere to the same California and Kern County Building Codes which would reduce the risk to people and property to less-than-significant levels. While future seismic events cannot be predicted, adherence to all federal, State, and local programs, requirements and policies pertaining to building safety and construction would limit the potential for injury or damage to a less-than-significant level. Therefore, the project, combined with past, present, and other foreseeable development in the area, would not result in a cumulatively significant impact by exposing people or structures to risk related to geologic hazards, soils, and/or seismic conditions. Therefore, the project would result in less-than-significant cumulative impacts related to geology and soils.

Surficial deposits, namely erosion and sediment deposition, can be cumulative in nature, depending on the type and amount of development proposed in a given geographical area. The cumulative setting for soil erosion consists of existing, planned, proposed, and reasonably foreseeable land use conditions in the region. However, construction constraints are primarily based on specific sites within a proposed development and on the soil characteristics and topography of each site. Individual projects are required to comply with applicable codes, standards, and permitting requirements (e.g., preparation of a SWPPP) to mitigate erosion impacts. The proposed project's compliance with these codes, standards and permitting requirements are required by Mitigation Measures MM 4.7-1 through MM 4.7-4. Other cumulative scenario projects would be required to adhere to similar requirements, thereby minimizing cumulative scenario erosion impacts. Specifically, all planned projects in the vicinity of the project are subject to environmental review and would be required to conform to the Kern County General Plan and Building Code, and would implement additional mitigation of seismic hazards to ensure soil stability, especially related to seismically induced erosion. With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-4, the project would not contribute to any cumulative impacts for geologic, seismic hazards or related events. Cumulative impacts related to geology and soils are less than significant.

The geographic scope for cumulative effects to paleontological resources includes the north-central portion of the Antelope Valley that surrounds the area of the proposed project. Given similarities in geologic formations, this area is expected to contain similar types of paleontological resources. There is no temporal scope because direct impacts to paleontological resources are permanent. Cumulative impacts to paleontological resources in the study area could occur if other related projects, in conjunction with the proposed project, had or would have impacts on paleontological resources that, when considered together, would be significant. Development of the proposed project, in combination with other projects in the area, has the potential to contribute to a cumulatively significant paleontological resources impact due to the potential loss of paleontological resources unique to the region. However, mitigation measures are included in this EIR to reduce potentially significant project impacts to paleontological resources during construction of the proposed project. Implementation of Mitigation Measure MM 4.7-5 requires paleontology sensitivity training for construction workers and Mitigation Measure MM 4.7-6 requires appropriate monitoring of construction activities for potential paleontological resources that may be encountered. Although project construction has the potential to disturb paleontological resources, the implementation of Mitigation Measure MM 4.7-7 would ensure the appropriate protocol is followed with regard to identifying and handling remains. Implementation of these mitigation measures would reduce potential impacts to paleontological resources to a less-than-significant level.

With implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7, the project would not result in significant impacts to paleontological resources. Given this minimal impact and the requirement for similar mitigation for other projects in the Antelope Valley, cumulative impacts to paleontological resources would be less than significant.

Mitigation Measures

Implementation of Mitigation Measures MM 4.7-1 through MM 4.7-7 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-7, cumulative impacts would be less than significant.

4.8.1 Introduction

This section of the EIR describes the affected environment and regulatory setting relating to greenhouse gases (GHGs) for the project. This section 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 GHG section of the project's air quality technical report, *Air Quality and Greenhouse Gas Emissions Analysis Technical Report for the Sanborn Solar Project, Kern County, California* (Air Quality and GHG Technical Report) (Dudek 2019), which was prepared by Dudek, located in Appendix C1 of this EIR and incorporated by reference herein. 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), U.S. Environmental Protection Agency (USEPA), and the applicable provisions of the California Environmental Quality Act (CEQA).

4.8.2 Environmental Setting

GHGs and climate change are a cumulative global issue. CARB and USEPA regulate GHG emissions within the state of California and the United States, respectively. While CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emissions reduction. CARB has divided California into regional air basins. The project site is located in the northwestern portion of the Mojave Desert Air Basin (MDAB) and is under the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD).

Greenhouse Gases

GHGs refer to gases that absorb and re-emit infrared radiation in the atmosphere. Many chemical compounds found in Earth's atmosphere act as GHGs, which allow sunlight to enter the atmosphere freely. When sunlight strikes Earth's surface, some of it is reflected back toward space as infrared radiation (heat). GHGs, however, absorb some of this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy sent from the sun to Earth's surface should be about the same as the amount of energy radiated back into space, leaving the temperature of Earth's surface roughly consistent. However, many gases exhibit the "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide, methane, and nitrous oxide) while others are exclusively human-made (e.g., gases used for aerosols). The principal GHGs are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs), are listed below (USEPA 2017).

- **Carbon dioxide:** CO₂ enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). CO₂ is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

- **Methane:** CH₄ is emitted during the production and transport of coal, natural gas, and oil. CH₄ emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.
- **Nitrous oxide:** N₂O is emitted during agricultural and industrial activities and during combustion of fossil fuels and solid waste.
- **Fluorinated gases:** HFCs, PFCs, and SF₆ are synthetic, powerful climate-change gases emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in minute quantities, but because they are potent climate-change gases, they are sometimes referred to as high Global Warming Potential (GWP) gases.
- **Sulfur hexafluoride:** SF₆ is a colorless, odorless, nontoxic, nonflammable gas. SF₆ is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity, including equipment such as electrical circuit breakers, which may be used for the project. The California Climate Action Registry (Registry) lists SF₆ as a potential source of fugitive emissions from electrical transmission and distribution equipment. Fugitive emissions are unintentional leaks of GHGs from equipment such as joints, seals, and gaskets.

Because different GHGs have different GWPs and CO₂ is the most common reference gas for climate change, GHG emissions are often quantified and reported as CO₂ equivalents (CO₂e). For example, SF₆ is a GHG commonly used in the electrical utility industry as an insulating gas in circuit breakers and other electronic equipment. SF₆, while comprising a small fraction of the total GHGs emitted annually worldwide, is a much more potent GHG with 22,800 times the GWP as CO₂. Therefore, an emission of 1 metric ton (MT) of SF₆ could be reported as an emission of 22,800 MTCO₂e (CARB 2014a). Large emissions sources are reported in million MT (MMT) of CO₂e (MMTCO₂e).

Greenhouse Gas Emissions Inventories

California

California produced approximately 424.1 gross MMTCO₂e in 2017, which is below the State's GHG reduction target of 1990 level GHG emissions (i.e., 431 MMTCO₂e) by 2020. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2016, accounting for approximately 40 percent of total GHG emissions in the state. This sector was followed by the industrial sector at approximately 21 percent and the electric power sector (including both in-state and out-of-state sources) at approximately 15 percent (CARB 2019a). CARB has projected that, unregulated, statewide GHG emissions for the year 2020 will be approximately 509 MMTCO₂e (CARB 2014b). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions. California GHG emissions by economic sector from 2009 to 2017 are summarized in **Table 4.8-1, California Greenhouse Gas Emissions (MMTCO₂e)**.

TABLE 4.8-1: CALIFORNIA GREENHOUSE GAS EMISSIONS (MMTCO₂E)

Emission Inventory Category	2009	2010	2011	2012	2013	2014	2015	2016	2017
Transportation	170.20	165.13	161.76	161.31	160.91	162.53	166.18	168.76	169.86
Electricity Generation (In State)	53.33	46.75	41.10	51.02	49.42	51.68	49.88	42.28	38.45
Electricity Generation (Imports)	48.04	43.59	46.87	44.50	39.98	36.79	33.93	26.32	23.94
Commercial	12.89	13.58	13.71	13.41	13.30	12.52	12.67	13.14	13.02
Industrial	87.90	91.50	90.17	91.08	93.69	94.02	91.48	89.49	89.40
Residential	29.32	30.06	30.51	28.21	29.02	23.75	24.17	25.27	26.00
Agriculture	32.85	33.68	34.34	35.46	33.99	35.06	33.75	33.51	32.42
High Global Warming Potential	12.29	13.52	14.53	15.51	16.75	17.73	18.60	19.26	19.99
Recycling and Waste	8.27	8.37	8.47	8.49	8.52	8.59	8.73	8.81	8.89
Total Gross Emissions	457.3	448.5	443.6	451.2	447.7	444.7	441.4	429.0	424.1

SOURCE: CARB, 2019b.

Kern County

On May 3, 2011, the Kern County Board of Supervisors signed a memorandum of understanding with the SJVAPCD to develop a communitywide GHG emissions inventory for the County. The Kern County Communitywide GHG Emissions Inventory 2055 Baseline Year – 2020 Forecast was finalized in May 2012. The GHG emission inventories were estimated for nine primary sectors (electricity production and consumption, residential/commercial/industrial combustion, transportation, fossil fuels industry, industrial processes, waste management, agriculture, forestry and land use, and other sources). The 2005 base year and 2020 forecasted GHG emissions inventory is presented below in **Table 4.8-2, Kern County Greenhouse Gas Emissions (MTCO₂e)**. As shown therein, the 2005 base year GHG emissions inventory was estimated at 27.0 million MTCO₂e and the 2020 forecasted GHG emissions inventory was estimated to be 27.3 million MTCO₂e. Note that the electricity consumption during both the 2005 base year and 2020 forecasted year do not account for electricity production, which is estimated to generate 13,002,127 MTCO₂e in 2005 and 18,455,958 MT CO₂e in 2020.

TABLE 4.8-2: KERN COUNTY GREENHOUSE GAS EMISSIONS (MTCO₂E)

Sector	2005 Base Year Emissions	Percent of 2005 Total	2020 Forecasted Emissions	Percent of 2020 Total
Electricity Consumption	6,039,114	22%	8,572,261	31%
Residential/Commercial/Industrial Combustion	1,281,498	5%	1,689,414	6%
Transportation	4,569,913	17%	4,823,756	18%
Fossil Fuels Industry	10,928,153	40%	7,002,009	26%
Industrial Processes	1,852,124	7%	2,348,754	9%
Waste Management	120,494	<1%	146,788	1%
Agriculture	2,024,470	7%	2,652,616	10%
Forestry and Land Use	11,028	<1%	14,669	<1%
Other Sources	218,823	1%	22,442	<1%
Total Gross Emissions	3,073,572		443.6	

SOURCE: San Joaquin Valley Air Pollution Control District, 2012.

Climate Change

GHGs are gases in the atmosphere that trap heat. The major concern with GHGs is that increases in GHG concentrations in the atmosphere are causing global climate change, which is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to GHGs from human activities, most in the world-wide scientific community agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases (i.e., global warming). According to CARB, the potential impacts in California due to global climate change may include: loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; larger forest fires; more drought years; increased erosion of California's coastlines and seawater intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation (CalEPA 2006). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC, 2001):

- Higher maximum temperatures and more hot days over nearly all land areas
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas
- Reduced diurnal temperature range over most land areas
- Increase of heat index over land areas
- More intense precipitation events

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, ocean acidification (including coral bleaching), impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood, the potential for substantial environmental, social, and economic consequences over the long-term may be great.

4.8.3 Regulatory Setting

Federal

The principal air quality regulatory mechanism at the federal level is the federal Clean Air Act (CAA) and in particular, the 1990 amendments to the CAA and the National Ambient Air Quality Standards (NAAQS) that it establishes. The federal CAA does not specifically regulate GHG emissions; however, the U.S. Supreme Court has determined that GHGs are pollutants that can be regulated under the CAA. There are currently no federal regulations that set ambient air quality standards for GHGs.

USEPA regulations applicable to the project include the following:

Federal Clean Air Act

USEPA is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO₂ gases, agricultural practices, and implementation of technologies to achieve GHG reductions. 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 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the federal CAA. USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆). The Endangerment Finding was required before USEPA could regulate GHG emissions under Section 202(a)(1) of the CAA. USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks

On May 19, 2009, the federal government announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard jointly approved by the USEPA and the National Highway Traffic Safety Administration (NHTSA) applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy (CAFE) standards and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO₂ per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO₂ per mile. According to the EPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle. In 2017, the EPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025 (USEPA 2018). In August 2018, the EPA and NHTSA proposed the Safer Affordable Fuel-Efficient Vehicles Rule that would, if adopted, would maintain the CAFE and CO₂ standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO₂ standards for model year 2020 are 43.7 mpg and 204 g/mi for passenger cars and 31.3 mpg and 284 grams of CO₂ per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. The proposal, if adopted, would also exclude CO₂-equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020 (USEPA and NHTSA, 2018).

Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 FR 57106–57513). The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 percent to 23 percent over the 2010 baselines (USEPA and NHTSA 2011). In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans and all types of sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (USEPA and NHTSA 2016).

40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule

This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MTCO_{2e} emissions per year (USEPA 2011). Additionally, reporting of emissions is required for owners of SF₆- and PFC-insulated equipment, when the total nameplate capacity of these insulating gases is above 17,280 pounds. The project would not be expected to trigger GHG reporting according to the rule; however, GHG emissions of the project are quantified in this EIR.

40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule

USEPA mandated to apply Prevention of Significant Deterioration (PSD) requirements to facilities whose stationary source CO_{2e} emissions exceed 75,000 tons per year (USEPA 2010). The project would not be expected to trigger PSD permitting as required by this regulation; however, GHG emissions of the project are quantified in this EIR.

Fuel Efficiency Standards for Construction Equipment

The federal government sets fuel efficiency standards for non-road diesel engines that are used in construction equipment. The regulations, contained in 40 CFR Parts 1039, 1065, and 1068, include multiple tiers of emission standards. Most recently, the USEPA adopted a comprehensive national program to reduce emissions from non-road diesel engines by integrating engine and fuel controls as a system to gain the greatest reductions. To meet these Tier 4 emission standards, engine manufacturers will produce new engines with advanced control technologies (USEPA 2004).

State

Executive Order S-1-07

Executive Order S-1-07 recognizes that the main source of GHG emissions in California is from the transportation sector, and establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. As a result of Executive Order S-1-07, CARB approved a proposed regulation to implement the Low Carbon Fuel Standard (LCFS) to reduce GHG emissions from the transportation sector in California by approximately 16 MMT by 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that establishes performance standards that fuel producers and importers must meet each year beginning in 2011.

Executive Orders S-3-05 and B-30-15

Executive Order S-3-05 sets target dates to reduce statewide GHG emissions to historical levels, as follows:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Executive Order B-30-15 sets a target date of 2030 to reduce GHG emissions to 40 percent below 1990 levels. Executive Orders S-3-05 and B-30-15 are only applicable to “State agencies with jurisdiction over sources of greenhouse gas emissions” (Order 4-29-2015 Section 2), and Kern County is not a State agency. Furthermore, there is currently no implementation strategy for these Executive Orders (i.e., a plan, which apportions GHG reductions by economic sector/activity/region, similar to the Assembly Bill (AB) 32 Scoping Plan).

Assembly Bill 32 and Senate Bill 32

In 2006, Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006) focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions, and is required to adopt rules and regulations directing State actions that would reduce GHG emissions to 1990 levels by 2020.

In 2016, Senate Bill (SB) 32 and its companion bill, AB 197, amends HSC Division 25.5 and establishes a GHG reduction target of 40 percent below 1990 levels by 2030, and includes provisions to ensure the benefits of State climate policies reach into disadvantaged communities.

Climate Change Scoping Plan

AB 32 required preparing a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (HSC Section 38561 (h)). CARB developed a Climate Change Scoping Plan that contains strategies to achieve the 2020 emissions cap (CARB 2008). In 2008, the initial Climate Change Scoping Plan contained a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives. In 2014, the First Update to the Scoping Plan upon the initial Climate Change Scoping Plan with new strategies and recommendations (CARB 2014b). CARB revised the projected statewide 2020 emissions estimate of 509.4 MMTCO_{2e} using the GWP values from the IPCC AR4 509.4 MMTCO_{2e} (CARB 2014b). Therefore, the emission reductions necessary to achieve the 2020 emissions target of 431 MMTCO_{2e} would be 78.4 MMTCO_{2e}, or a reduction of GHG emissions by approximately 15.4 percent. In 2017, the 2017 Scoping Plan established a 2030 GHG reduction target of 40 percent emissions reductions below 1990 levels (CARB 2017a).

Senate Bill 97

SB 97 was enacted requiring the Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions, or the effects related to releases of GHG emissions. OPR submitted proposed amendments to the Natural Resources Agency in accordance with SB 97 regarding analysis and mitigation of GHG emissions. As directed by SB 97, the Natural Resources Agency adopted Amendments to the CEQA *Guidelines* for GHG emissions, which became effective in 2010.

Senate Bill 375

SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. CARB adopted the vehicular GHG emissions reduction targets, in consultation with the metropolitan planning organizations (MPOs), which require a 7 to 8 percent reduction by 2020 and a 13 to 16 percent reduction by 2035, for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs, such as the Kern Council of Governments (KCOG), will work with local jurisdictions in the development of sustainable community strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. KCOG's reduction target for per capita vehicular emissions is 5 percent by 2020 and 10 percent by 2035 (CARB 2010).

KCOG adopted the 2018 Regional Transportation Plan (RTP), which includes a Sustainable Community Strategies (SCS) component in accordance with SB 375. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County.

Assembly Bill 1493

In a response to that transportation sector accounting for more than half of California's CO₂ emissions, AB 1493 was enacted by July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state. The bill required that CARB set

GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in 2004. When fully phased in, the near term (2009–2012) standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term standards will result in a reduction of about 30 percent.

California Green Building Standard Code

The State of California adopted the 2010 CALGreen Code, which became effective in January 2011. Building off of the initial 2008 California Green Building Code, the 2010 CALGreen Code represents a more stringent building code that requires, at a minimum, that new buildings and renovations in California meet certain sustainability and ecological standards. The 2010 CALGreen Code has mandatory Green Building provisions for all new residential buildings that are three stories or fewer (including hotels and motels) and all new non-residential buildings of any size that are not additions to existing buildings.

The California Building Standards Commission adopted the 2013 California Building Standards Code that also included the latest 2013 CALGreen Code, which became effective on January 1, 2014. The mandatory provisions of the code are anticipated to reduce GHG emissions by 3 MMTCO₂e by 2020, reduce water use by 20 percent or more, and divert 50 percent of construction waste from landfills. Additionally, the California Building Code includes a requirement for a 20 percent reduction in indoor potable water usage. The 2013 California Energy Code (Title 24, Part 6), which is also part of the CALGreen Code (Title 24, Part 11, Chapter 5.2), became effective on July 1, 2014.

California Renewables Portfolio Standard

First established in 2002 under SB 1078, California's Renewables Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030 (California Energy Commission 2019). In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy.

Senate Bill 100

SB 100 (De León, also known as the "California Renewables Portfolio Standard Program: emissions of greenhouse gases") was approved by the California legislature and signed by Governor Brown in September 2018. increased the standards set forth in SB 350 establishing that 44 percent of the total electricity sold to retail customers in California per year by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the State that eligible renewable energy resources and zero-carbon resources supply 100 percent of the retail sales of electricity to California. This bill requires that the achievement of 100 percent zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Senate Bill 1368

SB 1368 requires the CPUC to establish a baseload generation standard for publicly owned or leased facilities which generate electricity at a GHG Emissions Performance Standard (EPS) of 1,100 pounds of CO₂e per megawatt-hour. SB 1368 also requires the posting of notices of public deliberations by publicly owned companies on the CPUC website and establishes a process to determine compliance with the EPS.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combined the control of smog- and soot- causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2019c). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025. The Zero Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufactures to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in 2018 to 2025 model years.

California Air Pollution Control Officers Association White Paper

The California Air Pollution Control Officers Association (CAPCOA) issued a “white paper” (*CEQA and Climate Change*—an authoritative report issued by any organization) on evaluating GHG emissions under CEQA (California Air Pollution Control Officers Association 2008). The strategies provided in that document are guidelines only and have not been adopted by any regulatory agency. The white paper serves as a resource to assist lead agencies in evaluating GHGs during review of environmental information documents. The methodologies used in this GHG analysis are consistent with the CAPCOA guidelines.

Regional

2018 Regional Transportation Plan/Sustainable Communities Strategy

The KCOG is the regional planning agency for Kern County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. KCOG serves as the federally designated metropolitan planning organization for Kern County. With respect to air quality planning and other regional issues, KCOG has prepared the 2018 Regional Comprehensive Plan for the region (Kern COG 2018). The 2018 RCP is a long-term (24 year) general plan for the region’s transportation network, and encompasses projects for all types of travel, including aviation and freight movement. The plan assesses environmental impacts of proposed projects.

The Kern COG 2018 RTP includes an SCS component in accordance with SB 375, the Sustainable Communities and Climate Protection Act of 2008. The Kern COG board of directors adopted its first SCS on June 19, 2014, and made a determination that, if implemented, the SCS would achieve the per capita

passenger vehicle GHG emissions targets established by the board of directors. The 2020 target is a 5% per capita reduction and the 2035 target is a 10% per capita reduction from the 2005 base year. Kern COG submitted its adopted SCS and GHG determination to CARB for review on June 4, 2015. On July 24, 2015, CARB accepted the determination that the Kern COG 2014 SCS, if implemented, would achieve the region's per capita GHG emission reduction targets for 2020 and 2035. SB 375 requires CARB to develop regional GHG emission reduction targets for passenger vehicles. CARB is to establish targets for the automobile and light-duty truck sector for 2020 and 2035 for each region covered by one of the state's 18 metropolitan planning organizations. Regional metropolitan planning organizations are responsible for preparing an SCS within their RTP.

The SCS strives to reduce air emissions from passenger vehicle and light-duty truck travel by better coordinating transportation expenditures with forecasted development patterns and, if feasible, help meet CARB GHG targets for the region. As explained in the Kern COG 2018 RTP EIR, the key purpose of SB 375 and the Kern COG SCS is to reduce per capita emissions originating from passenger vehicles and light-duty trucks.

Accordingly, the 2018 RTP:

- Describes sources of emissions in the Kern region, 2020 and 2035 emission reduction targets established by CARB for the San Joaquin Valley, and modeling techniques used to estimate and forecast emissions
- Identifies statewide strategies to reduce transportation-related emissions and their anticipated effect within the Kern region
- Identifies regional strategies that complement the SCS by reducing emissions in other sectors (e.g., energy consumption)
- Quantifies the effect of policies and programs in the RTP that reduce transportation-related emissions in the region and
- Compares the emissions reductions anticipated with implementation of the SCS with the regional targets (Kern COG 2018).

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to greenhouse gas emissions. The policies and implementation measures in the Kern County General Plan related to greenhouse gas emissions that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

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

1.10.2 Air Quality

Policies

- Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.
- Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, will ensure that:
- (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
 - (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.
- Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.
- Policy 21: The County shall support air districts efforts to reduce PM₁₀ and PM_{2.5} emissions.
- Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.

Implementation Measures

- Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.
- Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:
1. Minimizing idling time.
 2. Electrical overnight plug-ins.
- Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:
1. Pave dirt roads within the development.

2. Pave outside storage areas.
3. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
4. Use of alternative fuel fleet vehicles or hybrid vehicles.
5. Use of emission control devices on diesel equipment.
6. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
7. Provide bicycle lockers and shower facilities on site
8. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
9. The use and development of park and ride facilities in outlying areas.
10. Other strategies that may be recommended by the local Air Pollution Control Districts.

Measure J: The County should include PM₁₀ control measures as conditions of approval for subdivision maps, site plans, and grading permits.

Chapter 5. Energy Element

Solar Energy Development

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

In 2009, the Kern County Board of Supervisors approved the proposed list of Energy, Efficiency, and Conservation projects for which the County will request funding under the provisions of the American Recovery and Reinvestment Act of 2009. The Kern County Planning and Natural Resources Department has requested an allocation for the preparation of a Climate Change Action Plan (CCAP) for the County General Plan. California's Climate Scoping Plan calls for local governments to reduce GHG emissions through the adoption of local programs as an important strategy to reduce community scale GHG emissions. Project conformance with an adopted CCAP would ensure the goal of AB 32 can be attained with the project.

Eastern Kern Air Pollution Control District

In 2012, EKAPCD adopted an addendum to its CEQA *Guidelines* to address GHG impacts, including quantitative thresholds for determining significance for GHG emissions for new stationary sources where EKAPCD serves as the lead CEQA review agency. A project is considered to have a significant project or cumulative considerable impact if it generates 25,000 tons or more of CO₂e per year (22,680 MTCO₂e).

This impacts would be considered to be fully reduced to below the significance level if it meets one of the following conditions:

- The project demonstrates to EKAPCD that it is in compliance with a state GHG reduction plan such as AB 32 or future GHG reduction plan if it is more stringent than the state plan; or
- Project GHG emissions can be reduced by at least 20 percent below BAU through implementation of one or more of the following strategies:
 - Compliance with Best Performance Standard (BPS);
 - Compliance with GHG Offset; and/or
 - Compliance with an Alternative GHG Reduction Strategy.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The objective, policies, and implementation measure in the Mojave Specific Plan applicable to the project that would serve to reduce GHG emissions are provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 4. Conservation Element

Objective

Objective 4.3 Encourage conservation of energy resources.

Policies

Policy 4.3.1 Promote energy conservation measures contained in Title 24 of the California Code of Regulations.

Policy 4.6.3 Encourage development designs that promote energy conservation and that minimize the direct and indirect emissions of air contaminants.

Implementation Measure

Implementation Measure N-3a) Review construction plans prior to the issuance of building permits to ensure that energy efficiency requirements of Title 24 of the California Administrative Code are met.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. There are no goals, policies, or implementation measures in the West Edwards Road Settlement Specific Plan that are

applicable to the project that would serve to reduce GHG emissions. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detail and refined manner unique to a smaller area of the County. Since there are no applicable goals, policies, or implementation measures within the West Edwards Road Settlement Specific Plan, refer to the applicable policies, goals, and implementation measures of the Kern County General Plan above.

4.8.4 Impacts and Mitigation Measures

Methodology

The project's potential impacts to GHGs have been evaluated using a variety of resources, including the Air Quality and GHG Technical Report (Dudek 2019), which is provided in Appendix C1 of this EIR, and relevant literature including information and guidelines by CARB, EPA, and the applicable provisions of CEQA. Additionally, the GHG savings from a 300 MW solar project were estimated. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described in the Thresholds of Significance section.

Construction and Decommissioning

The entire construction process is estimated to take between 18 and 30 months, depending on workforce. However, for emissions modeling it was conservatively anticipated to occur over an approximately 18-month period. In order to complete construction activities within the 18-month period, a larger number of employees and associated equipment would be onsite versus a 30-month construction duration that would have a reduced number of employees and associated equipment. Therefore, construction being completed in the shorter 18-month duration would have a greater environmental impact than a longer 30-month construction duration.

Short-term emissions are primarily from the construction phase of a project and are recognized to be short in duration and without lasting impacts on air quality. CalEEMod version 2016.3.2 was used to estimate emissions from construction worker vehicles and onsite construction equipment. Construction of the project would result in GHG emissions primarily associated with the use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. Detailed construction assumptions are provided in the Air Quality and GHG Technical Report, included in Appendix C1, of this Draft EIR.

The project has a tentative life of 35 years. At which time the operations may be renewed and onsite technology updated, or, alternatively, the project may be decommissioned. As decommissioning activities would be similar to the construction activities (using the same types of equipment and same general activities), the quantified emissions from construction are used as a surrogate for decommissioning activities. However, it would be anticipated that the decommissioning activities would be reduced from those estimated for the construction activities as the efficiencies of the construction equipment and on-road vehicles would be consistent with the future decommissioning year, which would require full compliance with stringent emissions standards for heavy-duty construction equipment resulting in anticipated substantial reductions in emissions from what is presented for construction activities.

Operations

Long-term operational emissions modeling included facility operations, worker commute trips, as well as haul truck trips and equipment operations (i.e., power washers) associated with the washing of solar panels. CalEEMod version 2016.3.2 was used to estimate emissions from operation of the project. Operational year 2022 was assumed for this analysis as it would be the first full year of project operation. Detailed operational assumptions are provided in the Air Quality and GHG Technical Report, included in Appendix C1, of this Draft EIR. Emissions from each source (i.e., area source, energy source, mobile source, solid waste, and water and wastewater) are discussed below:

- **Area Sources:** During operation of the project, area sources that would include the gas-insulated switchgear. It is assumed that the project would require approximately 600 pounds of SF₆ gas to operate the breakers annually. The project's circuit breakers would have a maximum annual leak rate of 0.5 percent based on the manufacturer's guaranteed specifications.
- **Energy Sources:** The estimation of operational energy emissions was based on electricity consumption for the security lighting, well pumps, and energy storage structure. This consumption was estimated using CalEEMod, assuming square footage for the electricity for the energy storage structure and a building type of a refrigerated warehouse. The estimated energy usage and GHG emission factors for Southern California Edison for year 2007 were used to conservatively calculate GHG emissions from energy sources.
- **Mobile Sources:** Mobile sources for the project would primarily be motor vehicles traveling to and from the project site. The project is anticipated to have up to 5,326 trips per year during operation, accounting for the commutes and performance of regular inspection and maintenance activities by ten full-time-equivalent staff. Regulatory measures related to mobile sources include AB 1493 (Pavley) and related federal standards. AB 1493 required that CARB establish GHG emission standards for automobiles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the State. In addition, the NHTSA and USEPA have established corporate fuel economy standards and GHG emission standards, respectively, for automobiles, light-, medium-, and heavy-duty vehicles. Implementation of these standards and fleet turnover (replacement of older vehicles with newer ones) will gradually reduce emissions from project's motor vehicles. Note that carbon intensity reduction associated with the Low Carbon Fuel Standards was not assumed in the analysis and, therefore, the analysis is considered conservative.
- **Solid Waste:** The project would generate solid waste from maintenance activities and the O&M building, and, therefore, would result in GHG emissions associated with landfill off-gassing. CalEEMod defaults were used for estimate GHG emissions associated with solid waste.
- **Water and Wastewater:** Supply, conveyance, treatment, and distribution of water for the project require the use of electricity, which would result in associated indirect GHG emissions. Water for dust suppression and cleaning the PV panels will come from either the Mojave Public Utility District or from groundwater sources via on-site wells. It is likely groundwater wells would utilize electricity generated onsite or from the local electrical grid; however for a worst-case emissions generation perspective a diesel generator has been assumed to power the water well pumps. The emissions are accounted for in the energy source emission estimates.

Thresholds of Significance

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

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

- a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The adopted CEQA *Guidelines* provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Quantitative significance thresholds for this impact area have not been adopted by the State of California.

Kern County has not developed a quantified threshold of significance for GHG emissions, but a project found to contribute to a net decrease in GHG emissions and found to be consistent with the adopted implementation of the CARB Climate Change Scoping Plan is presumed to have less-than-significant GHG impacts.

In March 2012, EKAPCD adopted an addendum to their CEQA *Guidelines* to address GHG impacts, including quantitative thresholds for determining significance of GHG emissions when EKAPCD is the CEQA lead agency. In these circumstances, a project is considered to have a significant impact or cumulatively considerable impact if it exceeds the following criteria:

- Generate 25,000 Metric Tons (MTs) or more of CO₂e per year

The above impact would be considered to be fully reduced to below the significance level if it meets one of the following conditions:

- The project demonstrates to EKAPCD that it is in compliance with a State GHG reduction plan such as AB 32 or future federal GHG reduction plan if it is more stringent than the State plan; or
- Project GHG emissions can be reduced by at least 20 percent below BAU through implementation of one or more of the following strategies:
 - a. Compliance with a Best Performance Standard (BPS);
 - b. Compliance with GHG Offset; and/or
 - c. Compliance with an Alternative GHG Reduction Strategy.

Additionally, impacts were evaluated based on whether the project would be consistent with the State's applicable GHG reduction goals, plans, policies, and regulatory requirements. Specifically, those plans and policies established in accordance with AB 32 and the State's RPS program as well as other federal, state, and local policies.

Project Impacts

Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

The project would directly generate GHG emissions during construction and routine operational and maintenance activities. Three GHGs associated with the project, CO₂, CH₄, and N₂O, would be emitted from on-road vehicles and non-road equipment during construction and from vehicles used during routine operational activities. The estimated GHG emissions from construction and operational activities associated with the project are shown in **Table 4.8-3, *Estimated Project Greenhouse Gas Emissions***.

TABLE 4.8-3: ESTIMATED PROJECT GREENHOUSE GAS EMISSIONS

Phase	GHG Emissions CO ₂ e (metric tons)
Total Construction Emissions (18 months)	10,109
Annualized Construction Emissions ^a	337
Operation (assumes a 30-year project lifetime)	243
Total Emissions	580
EKCAPCD Threshold	25,000 (22,680 MTCO ₂ e)
Exceed Threshold?	No

NOTE:

See Appendix C1 for GHG emissions calculations. Note that the numbers have been rounded to the nearest metric ton and, therefore, values may not add exactly.

^a 30-year emissions are calculated by dividing total construction over 30 years and adding to the annual emissions operational emissions.

SOURCE: Dudek, 2019.

While the project has a tentative life of 35 years, the default is to amortize construction emissions over a 30-year project lifetime. As shown in Table 4.8-2, *Estimated Project Greenhouse Gas Emissions*, the total construction-related CO₂e emissions annualized over a default project lifetime (30 years) is equivalent to approximately 337 MTs per year of CO₂e. In addition, annual operational emissions would total 243 MTs per year of CO₂e, which would result in a total project emission of 580 MTs per year of CO₂e when considering both construction and operational emissions. This value is well below the EKAPCD threshold of 25,000 tons per year of CO₂e (22,680 MTs per year of CO₂e). Therefore, the project's contribution to climate change would not be cumulatively considerable and the project would not conflict with the State's goal to reduce GHG emissions to 1990 levels by 2020.

In addition, because the project is intended to generate electricity from a renewable source of energy, it would not result in substantial GHG emissions due to the burning of fossil fuels once in operation. Overall, operation of the project would create renewable energy over the maximum 35-year life of the project. This energy would displace the GHG emissions which would otherwise be produced by existing BAU power generation resources (including natural gas, coal, and renewable combustion resources). The project would generate a maximum of 300 MW of electricity at any one time. As shown in **Table 4.8-4, *Displaced GHG Emissions Over 30-Year Operational Lifetime***, the project could displace a net total of approximately 9,800,180 MTs of CO₂e over a 30-year lifespan. Such a reduction would assist in the attainment of the

State's goal to reduce GHG emissions. Therefore, operation of the project would result in a substantial net reduction in GHG emissions, even when accounting for the very minimal operational GHG emissions of the project from a relatively small number of periodic maintenance and vehicle trips.

TABLE 4.8-4: DISPLACED GHG EMISSIONS OVER 30-YEAR OPERATIONAL LIFETIME

	CO ₂ e (metric tons)
Net Annual Displaced Emissions	326,673
Net Total Project Displaced Emissions (assumes a 30-year project lifetime)	9,800,190
SOURCE: Dudek, 2019.	

Given that the project would result in a net decrease of CO₂e emissions, impacts related to the generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment would be considered less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.8-2: The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas.

As discussed above, impacts were evaluated based on whether the project would be consistent with the State's applicable GHG reduction goals, plans, policies, and regulatory requirements as well as other federal, state, and local policies, as provided in the following analyses.

CARB Climate Change Scoping Plan

The project would comply with the strategies recommended by the State of California, the EPA, and the Climate Change Scoping Plan, as shown in **Table 4.8-5, California Greenhouse Gas Emission Reduction Strategies**. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the 33 percent RPS by 2020 as well as the other measures listed in **Table 4.8-6, Applicable Scoping Plan Strategies for the Proposed Project**. These measures would primarily be those actions related to energy efficiency. A discussion of the consistency of the project with these measures is provided below. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the project is reasonably expected to displace region-wide and Statewide emissions of GHGs over the expected life of the project.

TABLE 4.8-5: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
Vehicle Climate Change Standards: AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in September 2004.	These are CARB enforced standards; vehicles that access the project and are required to comply with the standards would comply with these strategies.
Other Light-Duty Vehicle Technology: New standards would be adopted to phase in beginning in the 2017 model.	
Heavy-Duty Vehicle Emission Reduction Measures: Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	
Diesel Anti-Idling: In July 2004, CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	Project would be subject to State law.
Hydrofluorocarbon Reduction: (1) Ban retail sale of HFC in small cans; (2) Require that only low global warming potential refrigerants be used in new vehicular systems; (3) Adopt specifications for new commercial refrigeration; (4) Add refrigerant leak tightness to the pass criteria for vehicular Inspection and Maintenance programs; (5) Enforce federal ban on releasing HFCs.	This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations apply to would comply with the measures.
Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.	Not applicable
Manure Management: Reduction of volatile organic compounds from confined animal facilities through implementation of control options.	Not applicable
Alternative Fuels - Biodiesel Blends: CARB would develop regulations to require the use of one to four percent biodiesel displacement of California diesel fuel.	Not applicable
Alternative Fuels - Ethanol: Increased use of ethanol fuel.	Not applicable
Achieve 50 percent Statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a Statewide basis. Therefore, a two percent additional reduction is needed.	The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended.
Zero Waste - High Recycling: Additional recycling beyond the State's 50 percent recycling goal.	The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended.
Landfill Methane Capture: Install direct gas use or electricity projects at landfills to capture and use emitted methane.	Not applicable

TABLE 4.8-5: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
Urban Forestry: A new Statewide goal of planting five million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	Not applicable
Afforestation/Reforestation Projects: Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types.	Not applicable
Water Use Efficiency: 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.	Not applicable
Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	The project would be consistent with State law.
Appliance Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	The project would be consistent with State law.
Cement Manufacturing: Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry.	Not applicable
Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage jobs/housing proximity, promote transit oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.	Not applicable
Smart land use, demand management, ITS, and value pricing are critical elements for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.	Not applicable
Enteric Fermentation: Cattle emit methane from digestion processes. Changes in diet could result in a reduction in emissions.	Not applicable
Green Buildings Initiative: Green Building Executive Order, S-20-04 (CA 2005), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels. Consistent with Mitigation.	Not applicable

TABLE 4.8-5: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
California Solar Initiative: Installation of 1 million solar roofs or an equivalent 3,000 megawatts (MW) by 2017 on homes and businesses; increased use of solar thermal systems to offset the increasing demand for natural gas; use of advanced metering in solar applications; and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	The project would result in an electric power generating capacity of approximately 300 MW. Therefore, the project would help implement and not conflict with this strategy.
SOURCE: ESA, 2019.	

TABLE 4.8-6: APPLICABLE SCOPING PLAN STRATEGIES FOR THE PROPOSED PROJECT

ID #	Sector	Strategy Name
T-1	Transportation	Advanced Clean Cars
T-2	Transportation	Low Carbon Fuel Standard
E-3	Electricity and Natural Gas	Renewables Portfolio Standard
E-4	Electricity and Natural Gas	Million Solar Roofs
W-1	Water	Water Use Efficiency
CR-1	Electricity and Natural Gas	Energy Efficiency
H-6	High GWP Gases	SF ₆ Leak Reduction Gas Insulated Switchgear
SOURCE: CARB, 2014c.		

Action T-1 relates to the Advanced Clean Cars program, in which the project's employees would purchase vehicles in compliance with the CARB vehicle standards that are in effect at the time of the vehicle purchase. In addition, as it related to Low Carbon Fuel Standards, under Action T-2, motor vehicles driven by the project's employees would use compliant fuels.

Action E-3 relates to renewable energy and the RPS, which is intended to increase California's renewable energy production to 20 percent by 2010, to 33 percent by 2020 and up to 100 percent by 2045, pursuant to SB 100. The CPUC estimates that the utilities are on track to meet the RPS requirement of 25 percent renewables by 2016 and are well-positioned to meet the 33 percent requirement by 2020 (California Energy Commission 2019). Utilities would also be required to meet the updated RPS goals of 60 percent renewable by 2030, and 100 percent renewable by 2045, pursuant to SB 100. A key prerequisite to reaching a target of 33 percent renewables would be to provide sufficient electric transmission lines to renewable resource zones and system changes to allow integration of large quantities of intermittent wind and solar generation. The project proposes a solar array with an electric power generating capacity of approximately 300 MW. Therefore, the project would be consistent with Action E-3.

Action E-4 aims to install 3,000 MW of solar energy capacity under the Million Solar Roofs Program. This measure would offset electricity from the grid, thereby reducing GHG emissions. By requiring greater energy efficiency for projects that seek solar incentives, the State would be able to reduce both electricity and natural gas needs and their associated GHG emissions. The project would result in an electric power generating capacity of approximately 300 MW. Therefore, the project would not conflict with Action E-4.

Action W-1 relates to water use efficiency. The State is currently implementing targeted water use efficiency programs as part of an integrated water management effort. Consistent with this measure, the project will utilize water panel washing, equipment washing, non-sanitary uses, and other miscellaneous uses, such as landscaping obtained on site from existing wells or by truck. The water using during operation of the project would be used in an efficient manner to reduced impacts to local water resources.

Action CR-1 relates to energy efficiency in commercial and residential buildings. Also, Action CR-1 notes the need for more aggressive utility programs to achieve long-term energy savings. The project would result in the development of PV solar energy generating facilities that would provide renewable energy to California Investor-Owned utilities, which in turn would be used by commercial and residential buildings in the State. Therefore, the project is consistent with and would not obstruct Action CR-1.

Action H-6 relates to sulfur hexafluoride (SF₆) from leakage of gas insulated switchgear use in electricity transmission and distribution systems by setting limits on leakage rates and implement best management practices for the recovery and handling of SF₆. Consistent with this action, the project would comply with any and all applicable regulatory requirements for any SF₆ containing switchgear.

KCOG's 2018 RTP

The project is consistent with the 2018 RTP as the project is consistent with the Kern County General Plan and Zoning Ordinance. The 2018 RTP incorporates local land use projections and circulation networks in city and county general plans. The 2018 RTP is not directly applicable to the project because the underlying purpose of the 2018 RTP is to provide direction and guidance by making the best transportation and land use choices for future development. Nevertheless, the project would not conflict with the goals and policies of the 2018 RTP. In addition, the project would not impact local transportation or land use during operation.

Other Federal/State/Local Policies

Table 4.8-7, *Project Consistency with an Applicable Plan, Policy, or Regulation for GHG Emissions*, below, evaluates project consistency with other applicable federal, State and local policies regarding GHG emissions. As shown in the table below, the project would fall below the annual emission triggers for compliance with federal regulations; therefore, federal regulations would not be applicable to the project. As a renewable energy project, the project would be exempt from State annual GHG reporting requirements and would be considered consistent with California's Emission Performance Standard and RPS requirements (described above under Section 4.8.3, *Regulatory Setting*, of this Draft EIR).

Overall, because the main objectives of the project are to assist California Investor-Owned utilities in meeting their obligations under California's RPS Program and assist California in meeting the GHG emissions reduction goal of 1990 level GHG emissions by 2020 as required by AB 32 and the future reduction goal of 40 percent below 1990 levels by 2030, the project would be compliant with the applicable recommended actions of the CARB Climate Change Scoping Plan as well as applicable federal, State and local policies. Specifically, the project would assist the State and regulated utility providers to generate a greater portion of energy from renewable sources consistent with the 2020 and 2030 RPS, including the targets established under SB 100. Therefore, this impact would be less than significant.

TABLE 4.8-7: PROJECT CONSISTENCY WITH AN APPLICABLE PLAN, POLICY, OR REGULATION FOR GHG EMISSIONS

Adopted Plan, Policy, or Regulation	Consistency Determination	Project Consistency
Federal		
40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule.	Not applicable	The project would have direct CO ₂ e operating emissions that are well below the 25,000 ton/year rule trigger.
40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule.	Not applicable	The project would have direct CO ₂ e operating emissions that are well below the 75,000 ton/year rule trigger.
State		
SB 1368. EPS Standard.	Consistent	The project, as a renewable energy generation facility, is determined by rule to comply with the GHG Emission Performance Standard requirements of SB 1368.
SB 351. 50% RPS Standard.	Indirectly consistent	This regulation is applicable to utilities, not generating facilities, but the energy from this project would help enable the utility buying the project's generation to comply with this legislation.
AB 32. Annual GHG Emissions Reporting	Not applicable	The project, as a solar energy generation project, is exempt from the mandatory GHG emission reporting requirements for electricity generating facilities as currently required by the CARB for compliance with the California Global Warming Solutions Act of 2006 (AB 32 Núñez, Statutes of 2006, Chapter 488, Health and Safety Code Sections 38500 et seq.).
Local		
Kern County General Plan - Air Quality Element Policies Goals and Implementation Measures	Consistent	Air Quality Mitigation Measures would ensure that the project is consistent with the Kern County General Plan Air Quality Element Policies, Goals, and Implementation Measures that will indirectly reduce GHG emissions by reducing fossil fuel combustion.
Mojave Specific Plan – Chapter 4. Conservation Element – Objectives and Policies	Consistent	The project, as a solar energy generation project, would serve to reduce reliance on non-renewable energy, which would encourage conservation of energy resources. A reduction of non-renewable energy use would further reduce GHG emissions.
SOURCE: ESA, 2019.		

Consideration of Mitigation Measures

The Office of the California Attorney General maintains a website with a list of CEQA mitigation measures for global climate change impacts. The Attorney General has listed some examples of types of mitigation measures that local agencies may consider to offset or reduce global climate change impacts from a project. The Attorney General assures that the presented lists are examples and not intended to be exhaustive, but instead provide measures and policies that could be undertaken. Moreover, the measures cited may not be appropriate for every project, so the Attorney General suggests that the lead agency should use its own informed judgment in deciding which measures it would analyze, and which measures it would require, for a given project.

The Attorney General suggests measures that could be undertaken or funded by a diverse range of projects, related to energy efficiency; renewable energy; water conservation and efficiency; solid waste measures; land use measures; transportation and motor vehicles; and carbon offsets. However, most of the suggested measures would not be applicable to the project, since they are more appropriate and applicable measures to reduce long-term operational GHG emissions.

The impacts on global warming and climate change are indirect, climate change is a worldwide phenomenon, and project-level emissions cannot be correlated with specific impacts based on currently available science. However, based on the analysis above, the project would be consistent with California's strategies to reduce greenhouse gas emissions to the levels required by AB 32. As a renewable energy project, the project would contribute to achieving the mandated emission reduction targets established by AB 32. Additionally, the project would comply with any applicable forthcoming regulations or requirements adopted under AB 32 or imposed by the State or federal government. Therefore, considering the project's minimal annual emissions and anticipated reduction in overall GHG emissions, the project is not expected to significantly contribute to global warming or climate change.

Furthermore, as the project would have an electric power generating capacity of approximately 300 MW, the project would be consistent with the Attorney General's recommended measures to reduce GHG emissions. Specifically, the project complies with the Attorney General's Recommended Measure to "Install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning." Therefore, the project would be compliant with the Attorney General's Recommended Measure regarding renewable energy. Because the project is below regional regulatory thresholds and would result in a reduction of GHG emissions, no mitigation measures would be required and impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Emissions of GHGs and their contribution to global climate change are considered a cumulative impact by definition. Therefore, the geographic extent of the project's cumulative area of impact would be worldwide.

The adopted CEQA *Guidelines* provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Quantitative significance thresholds for this impact area have not been adopted by the State of California. In addition, Kern County has not adopted quantitative thresholds for determining significance of GHG emissions at the time of this writing. However, EKAPCD has recently adopted an addendum to its CEQA *Guidelines* titled: "Addressing GHG Emission Impacts for Stationary Source Projects When Serving as the Lead CEQA Agency." This addendum is the policy that EKAPCD will use when it is the lead agency for CEQA to determine the project-specific and cumulative significance of GHG emissions from new and modified

stationary source (industrial) projects. Under this policy, a project is considered to have a cumulatively considerable impact if it generates 25,000 metric tons or more of CO₂e per year.

Total GHG emissions of 580 MTCO₂e for the project are shown in Table 4.8-3, *Estimated Project Greenhouse Gas Emissions*. In addition to these project GHG emissions, other cumulative projects in the vicinity of the project site, identified in Chapter 3, *Project Description*, Table 3-5, *Cumulative Projects List*, largely consist of utility-scale alternative power generation (i.e., solar and wind) facilities. The nature of these projects is such that, like the project, they would be consistent with the strategies of the Climate Change Scoping Plan. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the RPS target of 33 percent of California's energy coming from renewable sources by 2020 and 50 percent by 2030. In order to meet the SB 32 GHG emissions reduction mandate, the 2017 Scoping Plan relies on achievement of the RPS target of 50 percent of California's energy coming from renewable sources by 2030. As previously discussed, the RPS target was updated in September 2018 under SB 100 to 60 percent by 2030. The project and other similar projects are essential to achieving the RPS.

The main contribution of GHG emissions from the project would be from construction equipment usage during the construction phase and motor vehicles trips by employees and maintenance vehicles during project operations. Transportation sources account for 40 percent of California's total GHG emissions (CARB, 2019a). The project's emissions would, therefore, contribute to the increase in emissions in the transportation sector. Construction emissions would be finite and temporary and would cease at the end of construction activities.

Although the project would result in a short-term contribution to cumulative GHG emissions in California, operation of the project would offset emissions from the electricity generation sector. It is estimated that the project would displace approximately 9,800,190 MTCO₂e over the project's maximum 30-year lifespan (refer to Table 4.8-4, *Displaced GHG Emissions Over 30-Year Operational Lifetime*). Therefore, the total GHG construction emissions that would be associated with the project would likely be offset by less than one month of operations. Overall, the project would not contribute to cumulative GHG emissions in California because operation of the project would provide electric power with negligible operational GHG emissions over the long term when compared to traditional fossil-fueled generation technologies. Thus, the project would not have a cumulatively considerable impact on global climate change, and cumulative impacts would therefore be less than significant.

CEQA *Guidelines* Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may be to adopt ordinances or regulations rather than impose conditions on a project-by-project basis. Global climate change is this type of issue. GHG impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). Causes and effects are not just regional or Statewide, they are worldwide. Because the project's operational GHG emissions would be offset and no mitigation is required, any other feasible reductions would be accomplished through CARB regulations adopted pursuant to AB 32. Cumulative impacts of the project on global climate change would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Cumulative impacts would be less than significant.

Section 4.9

Hazards and Hazardous Materials

4.9.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for hazards and hazardous materials in the study area. It also describes the project's potential impacts on residences and other sensitive receptors that could be exposed to these hazards (other than geologic hazards; see Section 4.7, *Geology and Soils*, of this EIR) and presents mitigation measures where applicable. Information in this section is based primarily on Phase I Environmental Site Assessments (ESAs), located in Appendix H of this EIR, which were completed for the project parcels and publicly available databases including the Department of Toxic Substances Control's EnviroStor and State Water Resources Control Board's GeoTracker.

4.9.2 Environmental Setting

This section discusses the existing conditions related to hazards and hazardous materials in the project area, and describes the environmental setting for hazardous materials and waste, airports, electromagnetic fields (EMFs), and wildfire hazards. Residences and other sensitive receptors such as schools are also described as their proximate location to the project site affects their exposure to the potential hazards described below. A description of the project site relative to hazards and hazardous materials can also be found below.

As described in Chapter 3, *Project Description*, the project includes the development a solar facility and associated infrastructure with the capacity to generate up to combined 300 megawatts (MW) of renewable electrical energy and up to 3 GWh of energy storage capacity on 2,006 acres of primarily privately owned land. The facility would include solar panels, gen-tie lines, electrical collection system, battery storage, substation, and an O&M facility. The energy would be ultimately transferred to the Southern California Edison (SCE) Windhub Substation and/or the SCE Westwind Substation.

Existing Setting

The project site is relatively flat and characterized by undeveloped open desert, active agriculture, and scattered low density rural land. The surrounding area of the project site is similarly undeveloped with a few residential land uses. The closest school to the project site is the Mojave Elementary School, located approximately 3 miles north-northwest of the northern boundary of the project site. The nearest public airport to the project site is Mojave Air & Space Port Airport, located approximately 1.3 miles north of the project site; however, the southern portion of the site is directly north of the Edwards Air Force Base site boundary. State Route 14 (SR-14), the nearest highway, is located approximately 1 mile west of the project site at its closest point.

Hazardous Materials and Waste

A hazardous material is any substance that, because of its quantity, concentration, or physical or chemical properties, may pose a hazard to human health and the environment. Under Title 22 of the California Code

of Regulations (CCR), the term “hazardous substance” refers to both hazardous materials and hazardous wastes. Both of these are classified according to four properties: (1) toxicity; (2) ignitability; (3) corrosiveness; and (4) reactivity (22 CCR 11, Article 3). A hazardous material is defined as:

“A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (22 CCR 66260.10).”

Various forms of hazardous materials can cause death; serious injury; long-lasting health effects; and damage to buildings, homes, and other property. Hazards to human health and the environment can occur during production, storage, transportation, use, or disposal of hazardous materials.

Recognized Environmental Concern (REC) is one of the terms used to identify environmental liability within the context of a Phase I Environmental Site Assessment. The American Society for Testing and Materials (ASTM) defines an REC as “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions” (ASTM, 2017). Phase I Environmental Site Assessments conducted for the project site were used to determine potential risks of encountering legacy contaminants at the site and are located in Appendix H of this EIR.

Photovoltaic Solar Panels and Cadmium Telluride

Photovoltaic (PV) solar panels that would be installed on the project site are made from polycrystalline silicon or thin film technology. Polycrystalline silicon solar panels may include small amounts of solid materials that are considered to be hazardous. Because such materials are in a solid and non-leachable state, broken polycrystalline silicon solar panels would not be a source of pollution to surface water, stormwater, or groundwater. Polycrystalline silicon panels removed from the site would be recycled or otherwise disposed at an appropriate waste disposal facility. In addition, the energy storage facility could include ion batteries which contain chemical contents that are considered hazardous, as well as lead acid, lithium ion, sodium sulfur, and sodium or nickel hydride.

The PV solar modules that would be installed on the project site utilize Cadmium Telluride (CdTe) thin film technology. The semiconductor layer in the modules is in the environmentally stable form of a compound rather than the leachable form of a metal. The CdTe compound is encapsulated in the PV module with the PV module containing less than 0.1 percent Cd content by weight. Due to optimal optical properties, only a three-micron thin layer of CdTe is used to absorb incident sunlight, with Cd content per 8 square feet of PV module less than that of one C-size flashlight nickel-cadmium (NiCd) battery.

It has been demonstrated that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil. During the PV module manufacturing process, CdTe is bound under high temperature to a sheet of glass by vapor transport deposition, coated with an industrial laminate material, insulated with solar edge tape, and covered with a second sheet of glass. The module design results in the encapsulation of the semiconductor material between two sheets of glass thereby preventing the exposure of CdTe to the environment.

Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules. These studies have consistently concluded that during normal operations, CdTe PV modules do not present an environmental risk. CdTe releases are also unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled at the end of their approximately 30-year life. The PV module manufacturer provides CdTe module collection and recycling services. Since 2005, the end-of-life CdTe PV modules are currently characterized as federal non-hazardous waste, and as a California-only hazardous waste. Solar equipment and infrastructure would be recycled as practical or disposed of in compliance with applicable laws. CdTe PV modules are an article of commerce, and are not classified as a hazardous material for shipping purposes under either federal or State law.

Historical Property Use

The project site and surrounding area have been historically only sparsely developed with transportation routes or railroad lines. Existing development in the project vicinity includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance facilities, mining, wind and solar energy, and meteorological towers. According to a review of the Department of Toxic Substances Control (DTSC) Envirostor database, there are no hazardous release sites located within a mile of any of the project sites (DTSC, 2019). Similarly, the State Water Resource Control Board's (SWRCB) GeoTracker database also showed no listed release sites (SWRCB, 2019) within the project site.

Edwards Air Force Base Existing Contamination

The southern portion of the project site is located immediately north of the Edwards Air Force Base. Edwards AFB is a Superfund site and was reported in several regulatory databases. Groundwater and soils have been contaminated with various solvent and fuel volatile organic compounds, benzene, toluene, ethyl benzene and xylene, perchlorate, 1,4-dioxane, N-Nitrosodimethylamine, and various metals. In addition to these contaminants, landfills may contain unexploded ordnance or other munitions-related materials. An extensive groundwater-monitoring program is already under way. Many of the 471 potential contamination sites are listed as needing no further investigation or no further action because of insignificant residual contamination. Based on the USEPA Briefing Map, dated June 2008, the contamination plumes appear to be generally down-gradient and outside of the immediate vicinity of the proposed project site.

There is one on-base CERCLA designated site within the project area identified in the Edwards AFB Environmental Restoration Program as Site 416. Site 416 (State Well No. 10/12-22Q1) is located on the project site and was an abandoned water well, likely used for agricultural and domestic uses until the 1950s. Initial sampling at Site 416 showed elevated levels of arsenic in the soil and groundwater. Arsenic was detected in the groundwater at concentrations exceeding the Maximum Contaminant Level (MCL); however, the detections were consistent with regional data. This site was closed by the lead regulatory agency, and no further investigation was recommended (USAF, 2003).

Electromagnetic Fields

Electromagnetic fields (EMFs) are associated with electromagnetic radiation, which is energy in the form of photons. Radiation energy spreads as it travels and has many natural and human-made sources. The electromagnetic spectrum, the scientific name given to radiation energy, includes light, radio waves, and x-rays, among other energy forms. Electric and magnetic fields are common throughout nature and are produced by all living organisms. Concern over EMF exposure, however, generally pertains to human-made sources of electromagnetism and the degree to which they may have adverse biological effects or interfere with other electromagnetic systems.

Commonly known human-made sources of EMF are electrical systems, such as electronics and telecommunications, as well as electric motors and other electrically powered devices. Radiation from these sources is invisible, non-ionizing, and of low frequency. Generally, in most environments, the levels of such radiation added to natural background sources are low.

Electric voltage (electric field) and electric current (magnetic field) from transmission lines create EMFs. Power frequency EMF is a natural consequence of electrical circuits and can be either directly measured using the appropriate measuring instruments or calculated using appropriate information. There are two options for interconnection of the project to the existing power network. Interconnection Option 1 consists of a generation tie (gen-tie) constructed from an onsite project substation which would connect to an existing transmission line or travel west to the Southern California Edison (SCE) Windhub and or/ Westwind Substation. Interconnection Option 2 consists of a collection line constructed from the western limits of the project site to a step-up conversion station. At the step-up conversion station, the power would be stepped-up to a 230 kV power for delivery to the SCE Windhub and/or Westwind Substation. The alignment is discussed in further in more detail in Chapter 3, *Project Description*, of this EIR.

On January 15, 1991, the California Public Utilities Commission (CPUC) initiated an investigation to consider its role in mitigating the health effects, if any, of electric and magnetic fields from utility facilities and power lines. A working group of interested parties, the California EMF Consensus Group, was created by the CPUC to advise it on this issue. The California EMF Consensus Group's fact-finding process was open to the public, and its report incorporated public concerns. Its recommendations were filed with the CPUC in March 1992. Based on the work of the California EMF Consensus Group, written testimony, and evidentiary hearings, CPUC's decision (93-11-013) was issued on November 2, 1993, to address public concern about possible EMF health effects from electric utility facilities. The conclusions and findings included the following:

"We find that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure. We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value."

This continues to be the stance of the CPUC regarding standards for EMF exposure. Currently, the state has not adopted any specific limits or regulations regarding EMF levels from electric power facilities.

In addition to transmission lines, the project proposes up to two onsite energy storage facility. Each facility would measure approximately 65 feet by 150 feet and would consist of battery storage modules placed in multiple prefabricated enclosures near the onsite substation. The energy storage technology and design for energy storage facilities has not been determined at this time, but could include any commercially available battery technology, including but not limited to lithium ion, lead acid, sodium sulfur, and sodium or nickel

hydride. Either way, the energy storage would occur as direct current (DC) which produce static EMFs and has not been associated with adverse health effects.

Increase in Ambient Temperatures

All exposed surfaces (e.g., houses, cars, rocks) absorb heat produced by the sun. A “heat island” effect is generated when cities cover miles of land with structures (e.g., concrete buildings and asphalt roads), which absorb and store significantly more heat during the day than undeveloped earth. Additionally, these cities are filled with energy-consuming devices (e.g., engines, appliances, and heating, air-conditioning, and ventilation [HVAC] systems) that generate waste heat.

Solar arrays consist of solar panels mounted on aluminum and steel support structures. The support structures have little or no exposure to sunlight. The project site would not be covered entirely with solar panels. The amount of the sun’s heat absorbed by a solar panel is similar to the amount of the sun’s heat absorbed by open land. However, solar panels store less heat than the earth because they consist of a thin, lightweight glass that is surrounded by airflow. Therefore, heat dissipates quickly from a solar panel compared with solid earth, which dissipates heat slowly. The project would have energy-consuming devices (e.g., inverters). Therefore, the project would generate marginal amounts of waste heat on the project site. However, there is nothing in the record to date that would indicate that the project would increase ambient air temperatures at or around the project site.

Hazardous Materials Transportation

The nearest highways are SR-14, a four-lane highway located approximately one-mile west of the project and SR-58, a four-lane highway located approximately 1 mile northeast of the project site. The transportation of hazardous materials within the State of California is subject to various federal, State, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway that is not designated for that purpose, unless the use of a highway is required to permit delivery or the loading of such materials (California Vehicle Code, Sections 31602 (b) and 32104(a)). The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. Information on CHP requirements and regulatory authority is provided in Section 4.9.3, *Regulatory Setting*, below. According to Section 2.5.4 of the Kern County General Plan Circulation Element, SR-14 and SR-58 are designated as adopted commercial hazardous materials shipping routes.

Airports

The nearest public airport to the project site is Mojave Air and Space Port Airport, located approximately 1.3 miles northeast of the northern project site. The project site intersects the Airport Influence Area Compatibility Zones B-1, B-2, and C for the Mojave Air and Space Port Airport according to the Kern County Airport Land Use Compatibility Plan (ALUCP). The ALUCP provides restrictions and criteria for development of land within each of the Compatibility Zones including density limits, height limits, and restrictions on uses which may be inappropriate due to the types of users normally associated with each use such as schools, hospitals, and nursing homes. Additionally, storage of fuels and other hazardous materials are restricted from Compatibility Zones A and B. Projects located within an Airport Influence Area must also meet the requirements of Federal Aviation Regulation 14 CFR Part 774, described below. **Table 4.9-1, ALUCP Compatibility Criteria**, describes the Compatibility Criteria for each zone.

TABLE 4.9-1: ALUCP COMPATIBILITY CRITERIA

Zone	Location	Impact Elements	Maximum Densities		Required Open Land
			Residential (du/ac)	Other Uses (people/ac)	
A	Runway Protection Zone or within Building Restriction Line	<ul style="list-style-type: none"> • High risk • High noise level 	0	10	All Remaining
B1	Approach/Departure Zone and Adjacent to Runway	<ul style="list-style-type: none"> • Substantial risk – aircraft commonly below 400 feet AGL or within 1,000 feet of runway. • Significant noise 	0.1	60	30%
B2	Extended Approach/Departure Zone	<ul style="list-style-type: none"> • Significant risk – aircraft commonly below 800 feet AGL. • Significant noise 	0.5	60	30%
C	Common Traffic Pattern	<ul style="list-style-type: none"> • Limited risk – aircraft at or below 1,000 feet AGL. • Frequent noise intrusion 	15	150	15%
D	Other Airport Environs	<ul style="list-style-type: none"> • Negligible risk • Potential for annoyance from overflights 	No Limit	No Limit	No Requirement
E	Special Land Use	<ul style="list-style-type: none"> • Compatibility issues 	15	150	No Requirement

Additional criteria are provided in Table 2A of the Kern County Airport Land Use Compatibility Plan.

The southern portion of the site is also immediately north of the Edwards Air Force Base property and the entire project site is located within the R-2508 Complex of Edwards Air Force Base, which is designated as special use airspace. The project site is located within the military fly over area, and per the Kern County Zoning Ordinance (Section 19.08.160), which requires military review for all wind turbines and communication towers over 80 feet, and all other structures over 100 feet above ground surface elevation. **Figure 4.9-1, *Restricted Use and Special Use Airspace Over the Project Site***, identifies the location of the project within the Airport Influence Area and the R-2508 Complex.

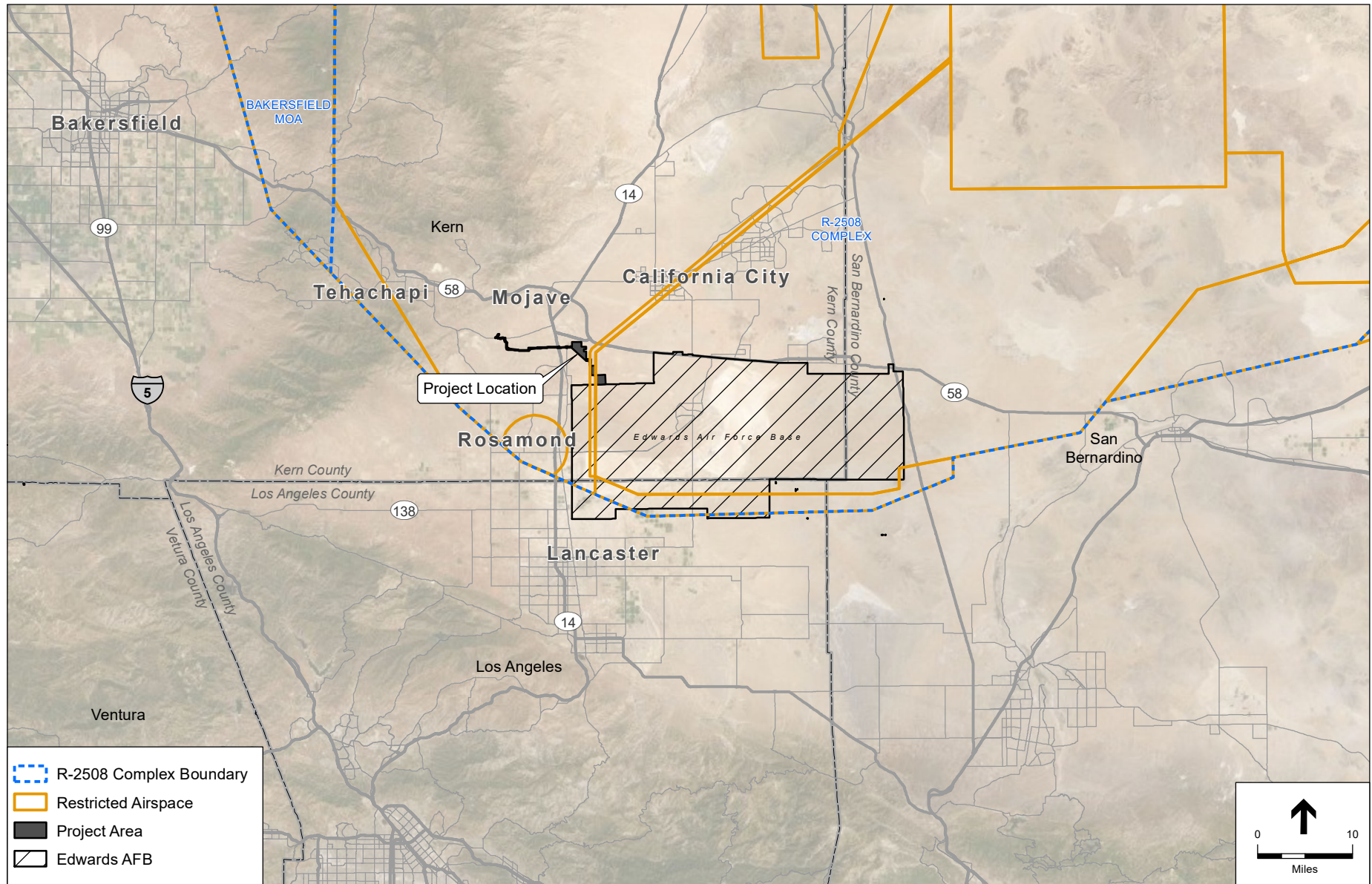


FIGURE 4.9-1: RESTRICTED USE AND SPECIAL USE AIRSPACE OVER THE PROJECT SITE

Fire Hazard Areas

The California Department of Forestry and Fire Prevention requires counties within the State to develop fire protection management plans that address potential threats of wildland fires. The Kern County Wildland Fire Management Plan identifies federal, State, and local responsibility areas for the entire County to facilitate coordination efforts for fire protection services. The project site is sparsely vegetated and not within an area identified by the California Department of Forestry and Fire Protection as having high or very high fire risk, as determined by the Kern County General Plan and CAL FIRE (CAL FIRE, 2007). Impacts related to wildfire hazards are further discussed in Section 4.18, *Wildfire*, of this EIR.

4.9.3 Regulatory Setting

Federal

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) was established in 1970 to consolidate in one agency a variety of federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. The EPA's mission is to protect human health and to safeguard the natural environment – air, water, and land – upon which life depends. The EPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for using permits and for monitoring and enforcing compliance. Where national standards are not met, the EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the EPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the “cradle to grave” system of regulating hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as “Superfund,” were enacted by Congress on December 11, 1980. This law (42 United States Code [USC] 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons

responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (Title 40, Code of Federal Regulations [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

Clean Water Act/Spill Prevention, Control, and Countermeasure Rule

The Clean Water Act (CWA) (33 USC 1251 et seq., formerly known as the Federal Water Pollution Control Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the United States. As part of the CWA, the EPA oversees and enforces the Oil Pollution Prevention regulation contained in 40 CFR 112, which is often referred to as the “SPCC rule” because the regulations describe the requirements for facilities to prepare, amend, and implement spill prevention, control, and countermeasure (SPCC) plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total aboveground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the “Navigable Waters” of the United States.

Federal Aviation Administration (FAA)

The FAA regulates aviation at regional, public, private, and military airports, such as Edwards AFB, located approximately eight miles southwest of the project site. The FAA regulates objects affecting navigable airspace and structures taller than 200 feet according to Federal Aviation Regulation 14 CFR Part 77. The U.S. and California Departments of Transportation also require the proponent to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration. According to 14 CFR Part 77.5, notification allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing any adverse impacts on the safe and efficient use of navigable airspace. Any structure that would constitute a hazard to air navigation, as defined in 14 CFR Part 77, requires issuance of a permit from the California Department of Transportation’s Aeronautics Program. The FAA regulates aviation at regional, public, private, and military airports, such as Edwards AFB, located approximately 8 miles southwest of the project site. The FAA regulates objects affecting navigable airspace and structures taller than 200 feet according to Federal Aviation Regulation 14 CFR Part 77. The U.S. and California Departments of Transportation also require the proponent to submit FAA Form 7460-1, Notice of Proposed Construction or Alteration. According to 14 CFR Part 77.5, notification allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing any adverse impacts on the safe and efficient use of navigable airspace. Any structure that would constitute a hazard to air navigation, as defined in 14 CFR Part 77, requires issuance of a permit from the California Department of Transportation’s Aeronautics Program. The permit is not required if the FAA aeronautical study determines that the structure has no impact on air navigation.

As described in 14 § CFR 77.9 (Construction or alteration requiring notice), each sponsor who proposes any of the following construction or alteration scenarios shall notify the FAA in the form and manner as follows:

If requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA of:

- (a) Any construction or alteration that is more than 200 feet above ground level (AGL) at its site.
- (b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
 - (1) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 feet in actual length, excluding heliports.
 - (2) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 feet in actual length, excluding heliports.
 - (3) 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section.
- (c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.
- (d) Any construction or alteration on any of the following airports and heliports:
 - (1) A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;
 - (2) A military airport under construction, or an airport under construction that will be available for public use;
 - (3) An airport operated by a Federal agency or the DOD.
 - (4) An airport or heliport with at least one FAA-approved instrument approach procedure.
- (e) You do not need to file notice for construction or alteration of:
 - (1) Any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation;
 - (2) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose;
 - (3) Any construction or alteration for which notice is required by any other FAA regulation.
 - (4) Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.

Per 14 CFR 77.7, notification requirements include sending one executed form set of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office

having jurisdiction over the area within which the construction or alteration will be located. The notice required must be submitted at least 45 days before the earlier of the following dates: (1) the date the proposed construction or alteration is to begin, or (2) the date an application for a construction permit is to be filed.

A permit is not required if the FAA aeronautical study determines that the structure has no impact on air navigation.

As described in 14 § CFR 77.9 (Construction or alteration requiring notice), each sponsor who proposes any of the following construction or alteration scenarios shall notify the FAA in the form and manner as follows:

If requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA of:

- (a) Any construction or alteration that is more than 200 feet above ground level (AGL) at its site.
- (b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
 - (1) 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 feet in actual length, excluding heliports.
 - (2) 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 feet in actual length, excluding heliports.
 - (3) 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section.
- (c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.
- (d) Any construction or alteration on any of the following airports and heliports:
 - (1) A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;
 - (2) A military airport under construction, or an airport under construction that will be available for public use;
 - (3) An airport operated by a Federal agency or the DOD.
 - (4) An airport or heliport with at least one FAA-approved instrument approach procedure.
- (e) You do not need to file notice for construction or alteration of:
 - (1) Any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation;

- (2) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose;
- (3) Any construction or alteration for which notice is required by any other FAA regulation.
- (4) Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.

Per 14 CFR 77.7, notification requirements include sending one executed form set of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Manager, Air Traffic Division, FAA Regional Office having jurisdiction over the area within which the construction or alteration will be located. The notice required must be submitted at least 45 days before the earlier of the following dates: (1) the date the proposed construction or alteration is to begin, or (2) the date an application for a construction permit is to be filed.

The U.S. Air Force (USAF) implements FAA and Department of Defense (DoD) policy and guidance regarding Special Use Airspace and Airspace for Special Use through various instructions, processes and organizations. The Air Force Flight Standards Agency, AF/A30, Headquarters Air Force (HAF) Encroachment Management Working Group, major command (MAJCOM) and Unit Airspace Managers are responsible for identifying and evaluating projects which may adversely affect operations associated with military airfields, ranges, and airspace.

Other Regulations

Other federal regulations overseen by the EPA relevant to hazardous materials and environmental contamination include 40 CFR Parts 100 to 149 -- Water Programs, 40 CFR Parts 239 to 259 -- Solid Wastes, and 40 CFR Parts 260 to 279 -- Hazardous Waste. These regulations designate hazardous substances under the Federal Water Pollution Control Act; determine the reportable quantity for each substance that is designated as hazardous; and establish quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration's (OSHA's) mission is to ensure the safety and health of U.S. workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. The OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR 1910, which include preparation of Health and Safety Plans (HASPs). HASPs identify potential hazards associated with a proposed land use and may provide appropriate mitigation measures as required. 29 CFR Section 1910.120(e) requires all employees working on site exposed to hazardous substances, health hazards, or safety hazards and their supervisors and management responsible for the site to receive training meeting the requirements of this paragraph before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards. These employees shall receive any necessary review training.

State

California Building Code, Section 608

Section 608 of the California Building Code includes requirements for battery energy storage systems greater than 20 kWh, which includes the proposed energy storage facilities. Section 608 includes requirements for vehicle impact protection, location, spacing between batteries, egress, security, and fire suppression systems.

California Public Utilities Commission General Order 95: Rules for Overhead Electric Line Construction

General Order 95 (GO 95) is the key standard governing the design, construction, operation, and maintenance of overhead electric lines within the State of California. It was adopted in 1941 and updated most recently in 2012. GO 95 includes safety standards for overhead electric lines, including minimum distances for conductor spacing, minimum conductor ground clearance, and standards for calculating maximum sag, electric line inspection requirements, and vegetation clearance requirements. The latter, governed by Rule 35, and inspection requirements, governed by Rule 31.2, are summarized below:

- Rule 35, *Tree Trimming*, defines minimum vegetation clearances around power lines. Rule 35 guidelines require 10-foot radial clearances for any conductor of a line operating at 110,000 Volts or more, but at less than 300,000 Volts. This requirement would apply to the proposed 230-kV lines.
- Rule 31.2, *Inspection of Lines*, requires that lines be inspected frequently and thoroughly for the purpose of ensuring that they are in good condition, and that lines temporarily out of service be inspected and maintained in such condition so as not to create a hazard.

Power Line Hazard Reduction (PRC 4292)

Public Resources Code (PRC) 4292 requires a 10-foot clearance around any tree branches or ground vegetation at the base of power poles carrying more than 110 kV. The firebreak clearances required by PRC 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of PRC 4296. Project structures would be exempt primarily because of their design specifications.

Power Line Clearance Required (PRC 4293)

PRC 4293 provides guidelines for line clearance, including a minimum of 10 feet of vegetation clearance around any conductor operating at 110 kV or higher.

Minimum Clearance Provisions (14 CCR 1254)

With respect to minimum clearance requirements, 14 CCR 1254 presents guidelines pertaining to non-exempt utility poles. The project structures would be exempt from the clearance requirements, with the exception of cable poles and dead-end structures.

The firebreak clearances required by 14 CCR 1254 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from the minimum clearance requirements by the provisions of 14 CCR 1255 or PRC 4296. The radius of the cylindroid is 10 feet, which is measured horizontally from the outer circumference of the specified pole or tower, with the height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space would be treated as follows:

- At ground level: Remove flammable materials, including ground litter, duff, and dead or desiccated vegetation that would propagate fire.
- From 0 to 8 feet above ground level: Remove flammable trash, debris, or other materials, grass, and herbaceous and brush vegetation. Remove all limbs and foliage of living trees up to a height of 8 feet.
- From 8 feet to the horizontal plane of highest point of the conductor attachment: Remove dead, diseased, or dying limbs and foliage from living sound trees and any dead, diseased, or dying trees in their entirety.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

A Hazardous Materials Business Plan (HMBP) must be submitted to the local Certified Unified Program Agency (the Kern County Public Health Services Department/Environmental Health Division) if the facility handles, uses or stores a hazardous material or mixture containing a hazardous material that has a quantity equal to or greater than 55 gallons of liquid, 500 pounds of a solid substance, or 200 cubic feet of compressed gas, a hazardous compressed gas in any amount, or hazardous waste in any amount. A HMBP must include the following:

- Inventory of hazardous materials at a facility;
- Emergency response plans and procedures in the event of a reportable release or threatened release of a hazardous material; and
- Training for all new employees and annual training for all employees in safety procedures in the event of a release or threatened release of a hazardous material (Cal EMA, 2011).

Hazardous Waste Control Act

The Hazardous Waste Control Act created the State Hazardous Waste Management Program, which is similar to but more stringent than the federal RCRA program. The act is implemented by regulations

contained in Title 26 CCR, which describes the following required aspects for the proper management of hazardous waste:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with DTSC.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Senate Bill 1082 (1993) created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), which requires the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are as follows:

- Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs (i.e., Tiered Permitting);
- Aboveground Petroleum Storage Tank Program;
- Hazardous Materials Release Response Plans and Inventory Program (i.e., Hazardous Materials Disclosure or “Community-Right-To-Know”);
- California Accidental Release Prevention Program (Cal ARP);
- Underground Storage Tank (UST) Program; and
- Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses in complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA. The CUPA in Kern County is the Environmental Health Division of the Kern County Public Services Department.

California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) was created in 1991 and unified California’s environmental authority in a single cabinet-level agency and brought the California Air Resources Board

(CARB), State Water Resource Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), CalRecycle, DTSC, Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal/EPA “umbrella” for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Their mission is to restore, protect, and enhance the environment and to ensure public health, environmental quality, and economic vitality.

Department of Toxic Substances and Control

DTSC, a department of Cal/EPA, is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. DTSC regulates hazardous waste primarily under the authority of the Federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

USC 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks or a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

California Office of Emergency Services

In order to protect public health and safety, and the environment, the California Office of Emergency Services (OES) is responsible for establishing and managing statewide standards for business and area plans relating to the handling and release, or threatened release, of hazardous materials. The OES requires that basic information on hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and health risks) be available to firefighters, public safety officers, and regulatory agencies. Typically, this information should be included in business plans in order to prevent or mitigate damage to the health and safety of persons and the environment from the release or threatened release of these materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code, Article 1—Hazardous Materials Release Response and Inventory Program (Sections 25500 to 25520) and Article 2—Hazardous Materials Management (Sections 25531 to 25543.3).

Title 19 CCR, Public Safety, Division 2, Office of Emergency Services, Chapter 4 - Hazardous Material Release Reporting, Inventory, and Response Plans, Article 4 (Minimum Standards for Business Plans) establishes minimum statewide standards for hazardous materials business plans. These plans must include the following: (1) a hazardous material inventory in accordance with Sections 2729.2 to 2729.7, (2) emergency response plans and procedures in accordance with Section 2731, and (3) training program information in accordance with Section 2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the State. Each business will prepare a hazardous materials business plan if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance;
- 55 gallons of a liquid;

- 200 cubic feet of compressed gas;
- A hazardous compressed gas in any amount; or
- Hazardous waste in any quantity.

California Occupational Safety and Health Administration

California Occupational safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

California Highway Patrol

A valid Hazardous Materials Transportation License, issued by the California Highway Patrol (CHP), is required by the laws and regulations of State of California Vehicle Code Section 3200.5 for transportation of either:

- Hazardous materials shipments for which the display of placards is required by State regulations; or
- Hazardous materials shipments of more than 500 pounds, which would require placards if shipping greater amounts in the same manner.

Additional requirements on the transportation of explosives, inhalation hazards, and radioactive materials are enforced by the CHP under the authority of the State Vehicle Code. Transportation of explosives generally requires consistency with additional rules and regulations for routing, safe stopping distances, and inspection stops (14 CCR 6 [1] [1150–1152.10]). Inhalation hazards face similar, more restrictive rules and regulations (13 CCR 6 [2.5] [1157–1157.8]). Transportation of radioactive materials is restricted to specific safe routes.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies pertaining to the avoidance of hazards and adverse effects related to hazardous materials. The policies, goals, and implementation measures in the Kern County General Plan related to hazards and hazardous materials that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Chapter 1. Land Use, Open Space and Conservation Element

1.3. Physical and Environmental Constraints

Goal

Goal 1: To strive to prevent loss of life, reduce personal injuries and property damage, and minimize economic and social diseconomies resulting from natural disaster by directing development to areas that are not hazardous.

Policy

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes 2.6–2.9 and Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in an unmitigated significant impact.

Policy 3: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.

1.4. Public Facilities and Services

Policy

Policy 6: The County will ensure adequate fire protection to all Kern County residents.

Chapter 2. Circulation Element

2.5.4. Transportation of Hazardous Materials

Transportation-related accidents and spills of hazardous materials pose a serious threat to the traveling public and nearby sensitive land uses. Transportation of hazardous materials poses a short-term threat to public health.

Goal

Goal 1: Reduce risk to public health from transportation of hazardous materials.

Policies

Policy 1: The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.

Policy 2: Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.

Implementation Measure

Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.

Chapter 4. Safety Element

4.2. General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint

Implementation Measure

Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.

4.9. Hazardous Materials

Implementation Measure

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Chapter 5. Energy Element

5.4.5. Solar Energy Development

Policy

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The objective and policy in the Mojave Specific Plan for hazards and hazardous materials applicable to the project are provided below. The Mojave Specific Plan contains additional

policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 9. Seismic and Safety Element

Objective

Objective 9.3: Protect the community from human-caused hazards related to air and ground transportation, hazardous materials, and other human activities.

Policy

Policy 9.3.2: Ensure that hazardous materials used in business and industry are properly handled, and that information on their handling and use is available to fire protection and other safety agencies in accordance with the Fire Code.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. There are no goals, policies, or implementation measures in the West Edwards Road Settlement Specific Plan that are applicable to hazards and hazardous materials. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detail and refined manner unique to a smaller area of the County. Since there are no applicable goals, policies, or implementation measures within the West Edwards Road Settlement Specific Plan, refer to the applicable policies, goals, and implementation measures of the Kern County General Plan above.

Kern County Multi-Hazard Mitigation Plan

The latest Kern County Multi-Hazard Mitigation Plan was developed in 2006. The Plan was developed by a Hazard Mitigation Planning Committee and identifies goals, objectives and actions pertaining to mitigating impacts from identified natural hazards. The public at large had an opportunity to comment prior to the completion of the Plan's final draft. FEMA realizes the importance of mitigation planning and offers incentives to communities that develop one. By following FEMA guidelines for approval of this plan, Kern County can be eligible for grant funding intended for mitigation projects (KCFD, 2018).

Kern County Wildland Fire Management Plan

The Kern County Wildland Fire Management Plan documents the assessment of wildland fire situations throughout the State Responsibility Areas within the County. The Kern County Fire Department Wildland Fire Management Plan provides for systematically assessing the existing levels of wildland protection services and identifying high-risk and high-value areas that are potential locations for costly and damaging wildfires. The goal of the plan is to reduce costs and losses from wildfire by protecting assets at risk through focused pre-fire management prescriptions and increasing initial attack success. Based on this assessment, preventive measures are implemented, including the creation of wildfire protection zones.

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2016 California Fire Code and the 2015 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees.

Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March of 2018 is the most current document that assesses the wildland fire situation throughout the SRA within the County. Similar to other plans, this document includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan provides for a comprehensive analysis of fire hazards, assets at risk, and level of services to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. Additionally, the plan provides an annual report of unit accomplishments, which, in 2017, included completion of a number of fuel reduction projects, hosted three wildfire safety expos in battalions 1, 5, and 7, and the award of three SRA fuel reduction grants for a total of \$500,000. The plan gives an overview of KCFD Battalions and ranks these areas in terms of priority needs as well as identifies the areas of SRA. According to the plan, 69 percent of Kern County areas are within a SRA. The County is broken up into six different fuel management areas, Tehachapi, Western Kern, Northern Kern, Mt. Pinos Communities, Kern River Valley, and Valley. The project site is located within Battalion 1 (Tehachapi) which is within a moderate fire hazard severity zone within the Tehachapi fire plan management area (KCFD, 2018).

Fire Prevention Standard No. 503-507 Solar Panels

The Kern County Fire Department Fire Prevention Division adopted Standard No. 503-507 Solar Panels (Ground Mounted, Commercial & Residential) on March 27, 2019. The standard is implemented in accordance with the 2016 CFC and Kern County Ordinance and is an official interpretation of the Kern County Fire Marshal's Office. The standard outlines installation requirements for photovoltaic ground-mounted and roof-mounted solar panels. The proposed project would mount systems for the modules on steel support posts that would be pile driven into the ground and would therefore comply with the ground mounted requirements of this fire prevention standard. Ground mounted solar panel requirements of this standard include water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD, 2019c).

Kern County Department of Environmental Health Services Division

The County of Kern Environmental Health Services Department is the CUPA for the project area, which provides site inspections of hazardous materials programs (above ground storage tanks, USTs, hazardous waste treatment, hazardous waste generators, hazardous materials management and response plans, and the

California Fire Code). This Department also provides emergency response to hazardous materials events, performing health and environmental risk assessment and substance identification.

Kern County and Incorporated Cities Hazardous Waste Management Plan

In response to the growing public concern regarding hazardous waste management, State Assembly Bill 2948 enacted legislation authorizing local governments to develop comprehensive hazardous waste management plans. The intent of each plan is to ensure that adequate treatment and disposal capacity is available to manage the hazardous wastes generated within the local government's jurisdiction.

The Kern County and Incorporated Cities Hazardous Waste Management Plan (Hazardous Waste Plan) was first adopted by Kern County and each incorporated city before September 1988 and was subsequently approved by the State Department of Health Services. The Hazardous Waste Plan was updated and incorporated by reference into the Kern County General Plan in 2004 as permitted by Health and Safety Code Section 25135.7(b) and, thus, must be consistent with all other aspects of the Kern County General Plan.

The Hazardous Waste Plan provides policy direction and action programs to address current and future hazardous waste management issues that require local responsibility and involvement in Kern County. In addition, the Hazardous Waste Plan discusses hazardous waste issues and analyzes current and future waste generation in the incorporated Cities, County, and State and federal lands. The purpose of the Hazardous Waste Plan is to coordinate local implementation of a regional action to affect comprehensive hazardous waste management throughout Kern County. The action program focuses on development of programs to equitably site needed hazardous waste management facilities; to promote onsite source reduction, treatment, and recycling; and to provide for the collection and treatment of hazardous waste from small-quantity generators. An important component of the Hazardous Waste Plan is the monitoring of hazardous waste management facilities to ensure compliance with federal and State hazardous waste regulations.

Kern County Land Use Compatibility Plan

The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and criteria by which the County can address compatibility issues when making planning decisions concerning airports and military aviation operations. The ALUCP maps airport influence areas as zones as A, B1, B2, C, D, E1 and E2, ranging from the most restrictive Zone A to the least restrictive Zone E, and identifies policies and compatibility criteria within each of those zones.

Proposals for public or private land use developments that occur within defined airport influence areas are subject to compatibility review. The principal airport land use compatibility concerns addressed by the ALUCP are (1) exposure to aircraft noise; (2) land use safety with respect to both people and property on the ground and the occupants of the aircraft; (3) protection of airport air space; and (4) general concerns related to aircraft overflights.

The proposed solar facility would be located within the Airport Influence Area of Mojave Air and Space Port and within the vicinity of Edwards Air Force Base (AFB), which is a military aviation installation identified in the ALUCP. Section 4.9 of the ALUCP addresses the Mojave Air and Space Port, and land uses and procedures relative to its aviation and includes height restrictions, and other compatibility criteria.

In addition, due to the location of the site within the R-2508 Complex and proximity to the Edwards AFB, the project falls within the following notification categories established in Section 4.17.3 of the ALUCP:

- Any structure within 75 miles of the R-2508 Complex that is greater than 50 feet tall.
- Any environmental document or discretionary project within 25 miles of the military installation boundaries.
- Any project that would create environmental impacts (e.g., visibility, elevated obstructions) within 25 miles of the R-2508 Complex.
- Any project within 25 miles of the centerline of any route/corridor.

Kern County Zoning Ordinance

The Kern County Zoning Ordinance has regulations regarding maximum permitted heights, both within specific zone districts and in districts with the H (Airport Approach Height) Combining District. The purpose of the H Combining District is to minimize aviation hazards by regulating land uses, restricting the height of buildings and vegetation, and specifying design criteria necessary to promote aviation safety. Structure height is restricted to prevent aesthetic impacts and to provide privacy for neighboring properties. Height limits are also established for structures within the Joint Service Restricted R-2508 Complex (which is part of a Special Use Airspace) that require written concurrence from the military authorities responsible for operations in the area.

4.9.4 Impacts and Mitigation Measures

Methodology

The methodology for determining impacts relating to hazardous materials focuses on (1) the potentially significant impacts related to the routine transport, use, or disposal of hazardous materials and the release of hazardous materials into the environment; and (2) proposed project components that could result in environmental contamination. The proposed project's potential impacts to hazards and hazardous materials have been evaluated using a variety of resources, including public records and databases maintained by DTSC, SWRCB, and DOGGR. The proposed project was evaluated for adequate accessibility for emergency responders based on the project location, construction plans, and site plans, and any potential alterations to existing evacuation routes and plans. The methodology for determining impacts relating to wildland fires focuses on the fire severity at the project site and the surrounding areas based on existing State and local maps and land characteristics. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project would have a significant impact related to hazards and hazardous materials if it would:

- a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4 mile of an existing or proposed school;
- d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- e. For a project located within the adopted Kern County Airport Land Use Compatibility Plan, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
- f. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan;
- g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires;
- h. Generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, would the project exceed the following qualitative threshold:

The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:

- i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and
- ii. Are associated with design, layout, and management of project operations; and
- iii. Disseminate widely from the property; and
- iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.

Project Impacts

Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction

Construction of the proposed project (solar facilities, connection to previously approved interconnection lines, and associated appurtenances) would not involve the routine transport, use, or disposal of significant quantities of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. Most of the hazardous materials use and hazardous waste generated by the project would occur during the temporary construction period. Likely uses would include cleaning fluids, solvents, petroleum products,

dust palliative, and herbicides. Some solid hazardous waste, such as welding materials and dried paint, may also be generated during construction. These materials would be transported to the project site during construction, and any hazardous wastes that are produced as a result of the construction of the project would be collected and transported away from the site. During construction of the project, material safety data sheets for all applicable materials present at the site would be made readily available to onsite personnel in accordance with required best management practices (BMPs) as part of a Stormwater Pollution Prevention Plan (see Section 4.10, *Hydrology and Water Quality*, of this EIR). Workers would be trained to properly identify and handle all hazardous materials. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment and/or disposal facility. All hazardous waste shipped offsite for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location. During construction of the facilities, non-hazardous construction debris would be generated and disposed of in local landfills. Sanitary waste would be managed using portable toilets located at a reasonably accessible onsite location. Mitigation Measure MM 4.17-1 would require debris and waste generated to be recycled to the extent feasible during construction, operation, and decommissioning and the designation of a Recycling Coordinator to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes.

Hazardous materials such as petroleum fuels and lubricants used on field equipment would be subject to the Material Disposal and Solid Waste Management Plan, and SPCC plan and other measures to limit releases of hazardous materials and wastes (see further discussion of BMP requirements in Section 4.10, *Hydrology and Water Quality*, of this EIR). Recyclable materials including wood, shipping materials, and metals would be separated when possible for recycling. Liquids and oils in the transformer and other equipment would be used in accordance with applicable regulations. The disposal of all oils, lubricants, and spent filters would be performed in accordance with all applicable regulations including the requirements of licensed receiving facilities. Overall the relatively limited use and small quantities of hazardous materials, and subsequently transport and disposal of such materials, during construction would be controlled through compliance with applicable regulations including the Kern County and Incorporated Cities Hazardous Waste Management Plan. As such, impacts during construction would be less than significant.

Operation

O&M activities associated with PV solar facilities are relatively minor when compared to conventional power plants or even other industrial land uses, and would require very limited use of hazardous materials and generation of hazardous waste. Any hazardous materials that would be used would be stored onsite and in designated areas in accordance with a Hazardous Materials Business Plan (see below). The project site would be secured and enclosed by a fence surrounding each site to prevent public access to hazardous materials and the PV panels. The interconnection (power line) portions of the project would largely use previously approved gen-tie lines and these connections would not require use of hazardous materials during operation (see EMF discussion below).

Primary O&M activities that would occur on the project site during operation would consist of panel washing but would also include without limitation: liaison and remote monitoring; administration and reporting; semi-annual and annual services; remote operations of inverters; site security and management; additional communication protocol; and repair and maintenance of solar facilities and other project facilities. No heavy equipment would be necessary during normal project operation. O&M vehicles would include trucks (pickup, flatbed), forklifts, and loaders for routine and unscheduled maintenance, and water

trucks for solar panel washing. Large heavy-haul transport equipment and cranes may be brought to the project site infrequently for equipment repair or replacement. Long-term maintenance and equipment replacement would be scheduled in accordance with manufacturer recommendations. Solar panels are warranted for 25 years or longer and are expected to have a life of 30 or more years. Moving parts, such as motors and tracking module drive equipment, motorized circuit breakers and disconnects, and inverter ventilation equipment, would be serviced on a regular basis, and unscheduled maintenance would be conducted as necessary. Mitigation Measure MM 4.9-1, which requires the preparation of a Hazardous Materials Business Plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to maintenance workers and/or the public.

The PV modules installed on the project site could utilize CdTe thin film technology and/or mono crystalline panels. As described above in the Environmental Setting, in the event that CdTe thin film technology is selected, it is generally bound to a glass sheet by a vapor transport deposition during the manufacturing process, followed by sealing the CdTe layer with a laminate material, and then encapsulating it in a second glass sheet. It has been demonstrated that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil. The modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions. The PV modules with CdTe thin film technology conform to the International Electrotechnical Commission (IEC) test standards IEC 61646 and IEC61730 PV as tested by a third party testing laboratory certified by the IEC. In addition, the PV modules also conform to Underwriters Laboratory (UL) 1703 a standard established by the independent product safety certification organization. In accordance with UL 1703, the PV modules undergo rigorous accelerated life testing under a variety of conditions to demonstrate safe construction and monitor performance. During normal operations, CdTe PV modules do not present an environmental risk. CdTe releases are also unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled at the end of their approximately 30-year life. Studies indicate that unless the PV module is purposefully ground to a fine dust, use of CdTe in PV modules do not generate any emissions of CdTe (Fthenakis, 2003). The project includes operational and maintenance protocols that would be used to identify and remove damaged or defective PV modules during annual inspections. The PV module manufacturer created the first global and comprehensive module collection and recycling program in the PV industry in 2005. Therefore, in the event the use of a CdTe PV systems are selected for the project it would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during normal operations.

Project operations would require the use of transformer oil at the project substations and the energy storage facility could contain battery acids, as well as lithium ion, lead acid, sodium sulfur, and sodium or nickel hydride. All transformers would be equipped with spill containment areas and battery storage would be in accordance with OSHA requirements such as inclusion of ventilation, acid resistant materials, and spill response supplies. All components would have a comprehensive SPCC plan, in accordance with all applicable federal, State, and local regulations. Dust palliatives and herbicides, if used during operations to control vegetation, may be transported to the project site. These materials would be stored in appropriate containers to prevent accidental release. SR-14 would be the likely designated route for the transport of hazardous materials located on or immediately adjacent to the project site. In addition, implementation of Mitigation Measure MM 4.17-1 and MM 4.9-1, would further reduce impacts related to hazards to a less-than-significant level.

Further, implementation of the project would not result in the significant risk of EMFs associated with overhead power lines, as each facility would interconnect into an existing substation. To the extent commercially feasible, the Project intends to utilize previously approved and/or existing interconnection facilities associated with other generating and transmission projects to minimize potential environmental impacts. In addition, the project would not construct sensitive uses under the existing lines but would adhere to applicable CPUC requirements on location of any gen-tie lines or gen-tie connections. As the State has not adopted any specific limits or regulations regarding EMF levels from electric power facilities, impacts in this regard would be less than significant.

Decommissioning and Disposal

During the decommissioning and disposal process, it is anticipated that all project structures would be fully removed from the ground. Above-ground equipment that would be removed would include electrical wiring, equipment on the inverter pads, and the interconnection transformer pad and associated equipment. Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment offsite. Removal of the PV modules would include removal of the racks on which the solar panels are attached, and their placement in secure transport crates and a trailer for storage, for ultimate transportation to another facility.

Once the PV modules have been removed, the racks would be disassembled, and the structures supporting the racks would be removed. All other associated site infrastructure would be removed, including fences, concrete pads that may support the inverters, transformers and related equipment, and underground conduit/electrical wiring. The fence and gate would be removed, and all materials would be recycled to the extent feasible. The area would be thoroughly cleaned and all debris removed. As discussed above, most panel materials would be recycled, with minimal disposal to occur in landfills in compliance with all applicable laws.

The PV module manufacturer would likely provide module collection and recycling services. In any case, current PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of PV modules. Disposal risks of end-of-life PV modules are minimized because of the low solubility of PV panel materials and because the modules can be effectively recycled at the end of their approximately 30-year life. Studies indicate that unless the PV module is purposefully ground to a fine dust, use of PV modules do not generate any emissions (Fthenakis, 2003). These studies have consistently concluded that use of PV modules do not present an environmental risk.

As described in Section 4.17, *Utilities and Service Systems*, Mitigation Measure MM 4.17-1 requires that an onsite recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The onsite recycling coordinator shall also be responsible for ensuring that wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal. The name and phone number of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits. Given that the normal use and disposal of PV modules would not present an environmental risk, project implementation would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during decommissioning and disposal activities. In addition, implementation of Mitigation Measure MM 4.17-1, would further reduce impacts related to hazards to a less-than-significant level.

Mitigation Measures

Implementation of Mitigation Measure MM 4.17-1 would be required (see Section 4.17, *Utilities and Service Systems*, for text of Mitigation Measure MM 4.17-1).

MM 4.9-1: During the life of the project, including decommissioning, the project operator shall prepare and maintain a Hazardous Materials Business Plan (HMBP), as applicable, pursuant to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern County Ordinance Code 8.04.030, by submitting all the required information to the California Environmental Reporting System (CERS) at <http://cers.calepa.ca.gov/> for review and acceptance by the Kern County Environmental Health Services Division/Hazardous Materials Section. The HMBP shall:

- Delineate hazardous material and hazardous waste storage areas
- Describe proper handling, storage, transport, and disposal techniques
- Describe methods to be used to avoid spills and minimize impacts in the event of a spill
- Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction and operation
- Establish public and agency notification procedures for spills and other emergencies including fires
- Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site

The project proponent shall ensure that all contractors working on the project are familiar with the facility's HMBP as well as ensure that one copy is available at the project site at all times. In addition, a copy of the accepted HMBP from CERS shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the projects permanent record.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1 and MM 4.17-1, impacts would be less than significant.

Impact 4.9-2: The project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Construction

According to the California Department of Conservation – Division of Oil, Gas and Geothermal Resources (DOGGR), which as of January 1, 2020 is known as the Geologic Energy Management Division (CalGEM), the project site is not located within a known oil production field, nor does the project site have any known active or abandoned oil wells (DOGGR, 2019). As a result, construction and development of the proposed project is unlikely to expose employees or construction workers to the dangers associated with operating a facility near an oil well.

Potential impacts that may result from construction of the project includes the accidental release of materials, such as cleaning fluids and petroleum products including lubricants, fuels, and solvents. Implementation of Mitigation Measure MM 4.9-1, which would provide methods to be used to avoid spills and minimize impacts in the event of a spill by providing procedures for handling and disposing hazardous materials as well as public and agency notification procedures for spills and other emergencies including fires, would reduce this impact to a less-than-significant level.

Despite the relatively open spaces surrounding the project site, nearby sensitive receptors could be exposed to pollutant emissions during construction of the project, resulting in a potentially significant impact. An adverse risk related to exposure to hazardous materials could result from the installation and use of transformers, grading of the site, the application of herbicides, or other construction or operation processes because of the distance between the sensitive receptors and the project site. Implementation of Mitigation Measure MM 4.9-2, which regulates the use of herbicides as described below, would reduce impacts related to sensitive receptors to a less-than-significant level.

Operation

The PV modules and inverters would produce no hazardous waste during operation. Each enclosed transformer at the substation would include mineral oil, but secondary containment would be provided in accordance with applicable federal, State, and local laws and regulations. The mineral oil contained in each transformer does not normally require replacement, and mineral oil disposal would be in accordance with all applicable federal, State, and local laws and regulations.

As stated in the environmental setting above, it has been demonstrated that standard operation of polycrystalline silicon PV systems does not result in pollution emissions to air, water, or soil. Polycrystalline silicon panels removed from the site would be recycled or otherwise disposed at an appropriate waste disposal facility. Hazardous materials are unlikely to occur during accidental breakage of the polycrystalline silicon solar panels. Similarly, fire damage would not result in the release of hazardous materials. The polycrystalline silicon PV panel does not pose a threat to nearby residences.

In the event that CdTe PV modules are used for the project, the CdTe PV module releases are unlikely to occur from accidental breakage of or fires involving the PV modules. CdTe is a highly stable semiconductor compound due to strong chemical bonding that translates to extremely low solubility in water, low vapor pressure, and a melting point greater than 1,000 degrees Celsius (°C). Potential impacts to soil, air, and groundwater quality from broken CdTe PV modules are highly unlikely to pose a potential health risk as they are below both human health screening levels and background levels (Sinha et al., 2012)

Potential CdTe emissions from fire are unlikely to occur at the project site because of the lack of fuel to support a sustained wildfire. Grass fires are the most likely fire exposure scenario for ground-mounted PV systems, and these fires tend to be short-lived due to the thinness of grass fuels. As a result, these fires are unlikely to expose PV modules to prolonged fire conditions or to temperatures high enough to volatilize CdTe, which has a melting point of 1,041°C. Moreover, even if a desert wildfire could reach that temperature, the actual CdTe emissions from a PV module would be insignificant (~0.04 percent) due to encapsulation in the molten glass matrix (Fthenakis et al., 2003).

Potential CdTe emissions from broken PV modules exposed to precipitation are also unlikely. Based on warranty return data, the breakage rate of CdTe PV modules is low, one percent over 25 years, which translates to an average of 0.04 percent per year. This breakage rate is an overestimate because over one-third of PV module breakage occurs during shipping and installation. Modules that break during shipping and installation

are removed from the construction site and returned to a manufacturing facility for recycling. Even if the CdTe semiconductor layer becomes exposed to the environment, it strongly resists being released from the PV module into the environment, and CdTe has an extremely low solubility in water.

The CdTe PV modules do not pose a threat to nearby residences. In the event CdTe PV modules are selected at the project site, it would not result in human or aquatic exposure of cadmium. A recent research article, Fate and Transport Evaluation of Potential Leaching Risks from Cadmium Telluride Photovoltaics (Sinha et al, 2012), further substantiates that during operation, CdTe PV modules do not pose a threat to human health or the environment due to its construction. The study evaluates the worst-case scenario to estimate potential exposures to CdTe compounds in soil, air or groundwater. The results show that exposure point concentrations in soil, air, and groundwater are one to six orders of magnitude below human health screening levels and below background levels, indicating that it is highly unlikely that exposures would pose potential health risks to onsite workers or offsite residents.

In addition, the hazardous materials that would be present in the energy storage facility would be contained within specifications that follow applicable federal State and local requirements. OSHA requirements call for the inclusion of appropriate ventilation, acid resistant materials, and presence of spill protection supplies.

Removal and/or maintenance of vegetation may require herbicide use during both construction and operation. If not handled properly, use of these products could create a hazard to the public (construction workers, maintenance employees, and nearby residences), resulting in a potentially significant impact. Mitigation Measure MM 4.9-2 would reduce impacts related to use of pesticides and herbicides to a less-than-significant level.

As noted above, the project would not involve the routine transport, use, or disposal of substantive quantities of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. The closest designated route for the transport of hazardous materials is SR 14, which is located adjacent to the project site. Adherence to regulations and standard protocols during the storage, transportation, and usage of any hazardous materials would minimize and avoid the potential for significant impacts related to upset and accident conditions.

Overall, adherence to regulations and standard protocols during the storage, transportation, and usage of any hazardous materials, and implementation of Mitigation Measure MM 4.9-2 would minimize or reduce potential impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials, to a less-than-significant level.

Decommissioning and Disposal

The decommissioning and disposal process is described under Impact 4.9-1, above. Most panel materials would be recycled to the extent feasible, with minimal disposal to occur in landfills in compliance with all applicable laws. The PV module manufacturer provides module collection and recycling services. In any case, current PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of PV modules, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. Batteries within the energy storage facility would also be recycled to the extent feasible, with minimal landfill disposal.

Mitigation Measure MM 4.17-1 requires that an onsite recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The onsite recycling coordinator

shall also be responsible for ensuring that wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal. The name and phone number of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits.

Mitigation Measures

Implementation of Mitigation Measures of MM 4.9-1 and MM 4.17-1 would be required (see Section 4.17, *Utilities and Service Systems*, for text of Mitigation Measure MM 4.17-1).

MM 4.9-2: The project proponent/operator shall continuously comply with the following:

- a. The construction contractor or project personnel shall use herbicides that are approved by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service for use in California and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use). Personnel applying herbicides shall have all appropriate State and local herbicide applicator licenses and comply with all State and local regulations regarding herbicide use.
- b. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.
- c. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife.
- d. Products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water.
- e. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated.
- f. A written record of all herbicide applications on the site, including dates and amounts, shall be furnished annually to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, and MM 4.17-1, impacts would be less than significant (see Section 4.17, *Utilities and Service Systems*, for text of Mitigation Measure MM 4.17-1).

Impact 4.9-3: The project would emit hazardous emissions or involves handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

The nearest populated areas to the project site are the unincorporated community of Mojave, the unincorporated community of Rosamond, and the City of Tehachapi, which are approximately 1.5 miles northeast, 7.5 miles southeast, and 14 miles northwest of the project site, respectively. The closest school to the project site is Mojave High School, located approximately 3 miles northwest in the community of Mojave. No schools are proposed in the vicinity of the project site. The project consists of solar energy generation facilities that involve using PV panels to generate electricity. Project-related infrastructure would not emit hazardous materials or involve handling hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school. Therefore, impacts related to hazardous emissions within a 0.25 mile of a school would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.9-4: The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

As discussed above, the project site is not identified in any of the California hazardous materials databases. Searches were completed for the subject parcels in the following hazardous materials lists: Cal/EPA's Cortese List including the California Department of Toxic Substances and Control's EnviroStor database of hazardous substances release sites; and Geotracker, the California database of leaking underground storage tanks (DTSC, 2019; SWRCB, 2019; ENSR Corporation, 2008; Partner Engineering and Science, 2017). As mentioned above, there is one CERCLA designated site within the project area, identified in the Edwards AFB Environmental Restoration Program as Site 416. Site 416, which contains an abandoned water well, showed levels of arsenic in the soil and groundwater exceeding the MCL. However, this is typical of the region. This site was closed by the lead regulatory agency, and no further investigation was recommended (USAF, 2003). Finally, there are no active Cease and Desist Orders or Clean Up and Abatement Orders for hazardous materials/facilities in the immediate project vicinity of the project site (SWRCB, 2019). Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.9-5: The project would result in a safety hazard or excessive noise for people residing or working in the project area, for a project located within the vicinity of a private airstrip.

The County's ALUCP requires that projects located within the planning boundary or Airport Influence Area for each airport comply with the height restriction standards and procedures set forth in FAA Part 77. 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 northern portion of the project is located within the Airport Influence Area of the Mojave Air and Space Port, within Compatibility Zones B1, B2, and C. The southernmost portion of the project directly abuts the northern boundary of the Edwards Air Force Base.

As stated in Chapter 3, Project Description, solar energy would be captured by PV panels, with the single axis tracker solar panels aligned in rows in the north south direction or in an east-west direction if a fixed tilt racking system were used instead. The maximum height of the single axis tracker solar panels would be up to 12 feet above grade at the beginning and end of each day. In addition, the project includes an onsite substation, located on the northwest portion of the northern site in Compatibility Zone B1. The substation would not exceed three acres in size and 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 height (transmission tower plus 15 feet). Poles associated with the get-tie line may be up to 180 feet tall, which would exceed the 100-foot height limit for structures in Zone E1. However, Section 4.9.5(1)(b) of the ALUCP provides an exemption to these height requirements for gen-tie lines and are subject to review on a case by case basis. Therefore, heights of the project components would not conflict with the requirements of the ALUCP and therefore, the project is not expected to result in a safety hazard.

Therefore, the project would be required to comply with the County's ALUCP and applicable FAA regulations regarding project approval to ensure that there is no conflict with airport operations and no safety hazards are presented.

Section 1.7.1 of the ALUCP requires that, prior to approval of any type of land use development, findings shall be made that such development is compatible with training and operational missions of relevant military operations. Section 4.17.3 of the ALUCP requires the notification of construction of the project to Edwards Air Force Base. Therefore, notification requirements would also apply for Edwards Air Force Base to ensure no conflict with their operations. As a result, with adherence to project notification requirements the proposed impact related to the Airport Land Use Compatibility Plan would be less than significant.

Furthermore, the proposed project would not result in an increase in air traffic levels or a change in location of air traffic patterns that would result in a substantial safety risk, as air traffic patterns would not be affected (the only mode of transport affected by the proposed project is automobile/truck operations). As previously discussed, and further detailed in Section 4.1, *Aesthetics*, the proposed solar panels would be composed of anti-reflective material; therefore, glare resulting from the panels is not expected to be a concern for pilots. For the reasons described above the proposed project would not result in safety or operational hazards to

aircraft that would represent a safety hazard to people residing or working in the area. In addition, the nature of operation of the solar facilities is not known to result in any operational issues or safety hazards to aircraft that would be a safety hazard to people.

Implementation of Mitigation Measure MM 4.9-3 would ensure the proposed project would be consistent with the ALUCP and General Plan policies of Kern County by requiring the developer to coordinate with DoD and obtain approval from FAA and the public airports and military installations in the area. Impacts would be less than significant.

See also Section 4.1, *Aesthetics*, for analysis of glare impacts and Section 4.13, *Noise*, for analysis of noise impacts.

Mitigation Measures

MM 4.9-3: Prior to the issuance of building and grading permits, the project proponent/operator shall comply with the following:

- a. Submit Form 7460-1 (Notification of Proposed Construction or Alteration) to the Federal Aviation Administration, in the form and manner prescribed in Code of Federal Regulation 77.17.
- b. Obtain a Federal Aviation Administration issued “Determination of No Hazard to Air Navigation.” This documentation shall include written concurrence from the military authority responsible for operations in the flight area depicted in the Kern County Zoning Ordinance Figure 19.08.160 that all project components in the flight area would create no significant military mission impacts.
- c. Provide documentation to the Kern County Planning and Natural Resources Department demonstrating that a copy of the final site plans has been provided to the operators of Mojave Air Space and Port.

Level of Significance after Mitigation

Impacts would be less than significant with implementation of Mitigation Measure MM 4.9-3.

Impact 4.9-6: The project would impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

As discussed in Section 4.15, *Transportation*, of this EIR, the project site is located in a rural area with the primary access roads (Backus Road, Lone Butte Road, and Purdy Avenue) allowing adequate egress/ingress to the site in the event of an emergency. Additionally, as part of the project, additional onsite access roadways (internal to the site) would be constructed. Therefore, the development of the proposed project would not physically interfere with emergency vehicle access or personnel evacuation from the site.

As further described in Section 4.15, *Transportation*, of this EIR, increased project-related traffic would not cause a significant increase in congestion and or significantly worsen the existing service levels at intersections on area roads; therefore, project-related traffic would not affect emergency access to the project site or any other surrounding location. The proposed project would not require closures of public roads, which could inhibit access by emergency vehicles. For these reasons construction and operation would have a less-than-significant impact on emergency access.

While impacts would be less than significant, Mitigation Measure MM 4.15-1 would provide further assurances for emergency access. Mitigation Measure MM 4.15-1 requires the preparation of a Construction Traffic Control Plan that considers access for emergency vehicles to the project site. During project operation, Mitigation Measure MM 4.15-1 requires the project operator obtain Kern County approval of all proposed access road designs prior to construction, further ensuring onsite emergency access is adequate.

Mitigation Measures

Implementation of Mitigation Measure MM 4.15-1 would be required (see Section 4.15, *Transportation*, for text of Mitigation Measure MM 4.15-1).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.15-1, impacts would be less than significant.

Impact 4.9-7: The project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The project site is not located within a high fire hazard severity zone (CAL FIRE, 2007). However, there is sparse vegetation onsite and site preparation would involve the removal of additional vegetation, although natural vegetation may be maintained if it does not interfere with project construction or the health and safety of onsite personnel. The project would also include an energy storage facility component which, while they generally burn with difficulty, can in fact burn or become damaged by fire and generate fumes and gases that are extremely corrosive. Dry chemical, carbon dioxide, and foam are the preferred methods for extinguishing a fire involving batteries as water is not useful in extinguishing battery fires. As discussed further in Section 4.14, *Public Services*, of this EIR, the project proponent would implement Mitigation Measure MM 4.14-1, which would require the preparation and submittal of a Fire Safety Plan to the Kern County Fire Department for review and approval. The purpose of the Fire Safety Plan would be to eliminate causes of fire, prevent loss of life and property by fire, to comply with County and County Fire Protection District standards for solar facilities, and to comply with the OSHA standard of fire prevention, 29 CFR 1910.39. The fire safety plan would address fire hazards of the different components of the project, including the energy storage facility, and would include BMPs to reduce the potential for fire and extinguishment techniques if a fire were to occur. As discussed in more detail in Section 4.18, *Wildfire*, the project would not place the gen-tie and electrical collection system, energy storage facility, or internal/perimeter dirt maintenance roads within a high fire hazard zone, and would clear all necessary vegetation, which would reduce fire risks.

The project site is not adjacent to urbanized areas; however, there are isolated residences in proximity to the project site. While the project is not anticipated to significantly increase the risk of wildfire, Mitigation Measure MM 4.14-1 would be implemented which includes the development and implementation of a fire safety plan for construction and operation of the project. With mitigation, potential impacts from wildfire would be reduced to a less than significant level.

Mitigation Measures

Implementation of Mitigation Measure MM 4.14-1 would be required (see Section 4.14, *Public Services*, for text of Mitigation Measure MM 4.14-1).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts would be less than significant.

Impact 4.9-8: The project would generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste? Specifically, would the proposed project exceed the following qualitative threshold: the presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the proposed project is significant when the applicable enforcement agency determines that any of the vectors:

- i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; or**
- ii. Are associated with design, layout, and management of proposed project operations; or**
- iii. Disseminate widely from the property; or**
- iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.**

Project-related infrastructure is not expected to result in features or conditions that could potentially provide habitat for vectors such as mosquitoes, flies, cockroaches, or rodents (such as standing water, agricultural products, or agricultural waste). The project site would produce a small amount of solid waste from construction activities. This may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation waste. These wastes would be segregated, where practical, for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. Construction and operation of the proposed solar arrays and associated facilities would not produce excessive wastes, standing water, or other features that would attract nuisance pests or vectors. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, multiple projects, including several utility-scale solar and wind energy production facilities, are proposed throughout Kern County. As shown in Table 3-5, *Cumulative Project List*, other solar energy projects are either operational, in construction or proposed within the region. The geographic scope of impacts associated with hazardous materials generally encompasses the project site and a 0.25-mile-radius area around the site. A 0.25-mile-radius area allows for a conservative cumulative analysis that ensures that all potential cumulative impacts will be assessed. Similar to other potential impacts, such as those related to geology and soils, risks related to hazards and hazardous materials are typically localized in nature since they tend to be related to onsite existing hazardous conditions and/or hazards caused by the project's construction or operation. A geographic scope of a 0.25-mile-radius area also coincides with the distance used to determine whether hazardous emissions or materials would have a significant impact upon an existing or proposed school, as discussed above. The project's compliance with Mitigation Measures MM 4.17-1 and MM 4.9-2 is similar to existing regulatory requirements that other projects would be required to adhere to and would avoid hazardous material-related impacts from occurring at any of the schools of the area.

Impacts regarding the handling, use, and/or storage of hazardous materials would be project specific and would not cumulatively contribute to impacts. An accident involving a hazardous material release during project construction or operation through upset or accident conditions including site grading and the use and transport of petroleum-based lubricants, solvents, fuels, batteries, herbicides, and pesticides to and from the project site would be location specific. Conformance with existing State and County regulations, as well as project safety design features and the implementation of Mitigation Measures MM 4.17-1 and MM 4.9-2 identified above would further reduce cumulative impacts. In addition, implementation of appropriate safety measures during construction of the project, as well as other cumulative projects, would reduce the impact to a level that would not contribute to cumulative effects. Given the minimal risks of hazards at the project site, cumulative impacts are unlikely to occur. Therefore, impacts would not be cumulatively significant.

Hazardous materials to be used during decommissioning and removal activities are of low toxicity and would consist of fuels, oils, and lubricants. Because these materials are required for operation of construction vehicles and equipment, BMPs would be implemented to reduce the potential for or exposure to accidental spills or fires involving the use of hazardous materials. Impacts from minor spills or drips would be avoided by thoroughly cleaning up minor spills as soon as they occur. While foreseeable projects have the potential to cause similar impacts, it is assumed these projects would also implement similar BMPs. Conformance with existing State and County regulations, as well as implementation of Mitigation Measures MM 4.9-2 and MM 4.14-1 of Section 4.14, *Public Services* [Fire Safety Plan], MM 4.15-1 and MM 4.17-1 of Section 4.17, *Utilities and Service Systems* [recycling of debris and waste], would further reduce the potential for cumulative impacts. In addition, implementation of appropriate safety measures during construction of the project, as well as any other cumulative project, would reduce the impact to a level that would not contribute to cumulative effects.

Therefore, impacts related to hazardous materials would not be cumulatively significant.

The project site is located within the Mojave Air and Space Port airport land use plan influence area and would be required to comply with the ALUCP policies and FAA notification and approval requirements listed in Mitigation Measure MM 4.9-3, just as any other project within the influence would. Thus, the

project would not combine with any other to become cumulatively significant and there would be less than significant cumulative impacts associated with airports or airstrip land use plans or air traffic hazards.

Mitigation Measures

Implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.14-1, MM 4.15-1, and MM 4.17-1, would be required (see Sections 4.14, *Public Services*, 4.15, *Transportation*, and 4.17, *Utilities*, for text of Mitigation Measures MM 4.14-1, MM 4.15-1, and MM 4.17-1, respectively).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.14-1, MM 4.15-1, and MM 4.17-1, cumulative impacts would be less than significant.

4.10.1 Introduction

This section of the EIR describes the hydrological environmental and regulatory settings, addresses potential impacts of the project on hydrology and water quality, and discusses mitigation measures to reduce impacts, where applicable. The information in this section is based on the Hydrology and Water Quality and Water Supply Assessment reports prepared for the project (Dudek, 2018a and Dudek 2018b), located in Appendices I and L1 of this EIR, respectively, as well as multiple online sources and published documents.

4.10.2 Environmental Setting

Regional Setting

The project site is located in the northwestern portion of the Mojave Desert on the western edge of the Antelope Hydrologic Unit (Dudek, 2018a). The Antelope Valley Region is a triangular-shaped, topographically closed basin bordered on the southwest by the San Gabriel Mountains, on the northwest by the Tehachapi Mountains, and on the east by a series of hills and buttes that generally follow the Los Angeles/San Bernardino County line.

Antelope Hydrologic Unit

The Antelope Hydrologic Unit is part of the Lahontan Region of the Regional Water Quality Control Board (RWQCB). The Antelope Hydrologic Unit includes portions of Los Angeles, Kern, and San Bernardino Counties, and corresponds to the Antelope Valley basin, which is a closed topographic basin with an area of about 2,400 square miles. Under the California Department of Water Resources mapping system used in the Lahontan Basin Plan, the Antelope Hydrologic Unit includes eight Hydrologic Areas: Chafee, Gloster, Willow Springs, Neenach, Lancaster, North Muroc, Buttes, and Rock Creek (SWRCB, 2009). The project is located in the Willow Springs Hydrologic Area or sub-watershed. In Antelope Valley, water flows east towards Rosamond Lake.

Climate

As described above, the project site is located within the Mojave Desert, which is considered a warm-temperature desert situated between the subtropical Sonoran Desert to the south and the cold-temperature Great Basin to the north. The Mojave Desert is characterized by dramatic variations in daily temperatures and more arid conditions than other North American desert regions. Freezing temperatures regularly occur during winter months, particularly at higher elevations. Summer months are typically hot, dry, and windy. Precipitation in the region ranges from 3 to 5 inches per year. Almost all precipitation arrives in the winter, but the region also experiences rare, intense summer thunderstorms.

More specifically, the project site is located near the community of Mojave, where, according to the nearest weather station, temperature ranges from an average monthly high of 96.8 degrees Fahrenheit in July to a low below freezing of 32.7 degrees Fahrenheit in December (WRCC, 2019). Average rainfall is approximately 5.87 inches annually.

Site Hydrology

Surface Hydrology and Drainage

Topography in the project site is relatively flat, and slopes to the southeast. Elevations range from a high of approximately 2,660 feet in the northwest corner of the site to a low of about 2,500 feet in the southeast portion of the project site. As a result, the site drains from the northwest to the southeast at an approximate average grade of 0.5 percent (Dudek, 2019a). However, due to the relatively low topographic relief, lack of development and minimal vegetation, most of the drainage flow originating in the study area infiltrates into the soils onsite. Evidence of surface flow within the project site are limited to poorly defined and shallow swales often only indicated by an increase in shrub density, and discontinuous ephemeral channels primarily located along the medians of paved roads, within unmaintained dirt roads, and alongside the railroad embankment (which separates the northern and southern sites) (Dudek, 2019a). Throughout the project site, drainage features are scattered and discontinuous, in that defined channels can abruptly become indistinguishable from the valley floor as stormwater runoff occurs as sheet flow. As a result, these conditions imply that surface runoff events are generally brief and infrequent, with rapid infiltration into the sandy substrate, and/or shallow ponding in low-lying areas quickly followed by high evaporation (Dudek, 2019a). The hydrology study of the site determined that flow patterns on the site could be divided into four drainage basins (labeled Basin 100, 200, 300, and 400) with flows converging approximately 1.5 miles downstream from the site in a well-defined channel that ultimately discharges into Rogers Dry Lake when there is sufficient flow.

Floodplains

The Federal Emergency Management Agency (FEMA) delineates flood hazard areas on its Flood Insurance Rate Maps (FIRMs); FIRMs are discussed in more detail below under Section 4.10.3, Regulatory Setting. According to the most recent FEMA FIRMs (06029C3295E and 06029C3700E), approximately 25 acres of the northern section and 100 acres of the southern section of the project site are located within a FEMA Special Flood Hazard Area, which includes all types of 100-year flood zones, such as floodways and shallow flooding (i.e., Zone A, AE, AH, AO, AR, A99, V, or VE) (Dudek, 2018a).

Soil Types and Erosion

According to data from the Soil Survey for Kern County, the project site consists primarily of Hydrologic Soil Group C and A (Dudek, 2019a). Group C soils are defined as having a slow infiltration rate when thoroughly wet and having a soil layer that impedes the downward movement of water or soils of moderately fine texture. These soils are considered to have a slow rate of water transmission. Group A soils which are less present than Group C soils, have a high infiltration rate (low runoff potential) when thoroughly wet. These are mainly deep well-drained to excessively drained sands or gravelly sands. Sandy soils typically have low cohesion and have a relatively higher potential for erosion when exposed to wind or moving water. Erosion potential onsite based on soil texture, slope length and slope steepness is low. Since the project site has minimal to no vegetation cover, erosion potential is slightly higher than it would

be if it was densely vegetated. Conversely, the low topographic relief of the site reduce the erosion potential. See also Section 4.7.2, *Geology and Soils*, for more information on soil erosion potential.

Groundwater Resources

Fremont Valley Groundwater Basin

The project site is located at the southern end of the Fremont Valley Groundwater Basin (FVGB), which underlies an extensive alluvial valley in the western Mojave Desert. The FVGB is bounded to the south and southeast by the Antelope Valley Groundwater Basin, to the east by the crystalline rocks of Red Mountain, the Rand Mountains, Castle Butte, the Bissell Hills, and the Rosamond Hills; and to the west and north by the Sierra Nevada, the Tehachapi Mountains, and the El Paso Mountains (Dudek, 2018a). The boundary between the FVGB and the Antelope Valley Groundwater Basin occurs along a groundwater divide approximated by a line connecting the mouth of Oak Creek through Middle Butte to the exposed basement rock near Gem Hill, and to the southeast of California City.

Natural recharge of the basin includes percolation of ephemeral streams that flow in from the Sierra Nevada. The general groundwater flow direction is toward Koehn Lake at the center of the Fremont Valley (one basin north of the Antelope Valley Hydrologic Unit), with no appreciable quantity of groundwater flowing out of the basin (Dudek, 2018a). Total storage capacity is estimated at 4,800,000 acre feet. Within the project area, the general pattern of groundwater flow is in a northerly to northeasterly direction (Dudek, 2019a). Groundwater quality is generally adequate for domestic, agricultural, and municipal uses, being of sodium bicarbonate character in the southeastern part of the basin and of sodium bicarbonate or calcium–sodium sulfate character in the southwest part of the basin (Dudek, 2018a). Historical total dissolved solids (TDS) content has ranged from 400 to 700 milligrams per liter (mg/L) in the southeastern part of the FVGB, and from 800 to 1,000 mg/L in the southwestern part of the FVGB (DWR, 2004). Data from 10 public supply wells in the basin show an average TDS content of 596 mg/L and a range of 398 to 1,400 mg/L (Dudek, 2018a). Groundwater in parts of the FVGB is locally impaired with high concentrations of fluoride and sodium; however, these impairments are more common in the northern and central subunits, especially in the Koehn Subunit. A well just north of the project site (Mojave Public Utilities District Well 30) is known to have nitrate concentrations that exceed maximum contaminant levels for drinking water and, thus, is limited to non-potable use (Dudek, 2019a).

Prior to the California Sustainable Groundwater Management Act (SGMA), the primary method for solving groundwater disputes and protecting groundwater basins was litigation. When over-pumping led to a crisis like seawater intrusion or chronic overdraft, people had little choice but to file a lawsuit—called an adjudication—in which all rights to water in a basin could be defined by a court. SGMA now ensures that basins can be managed sustainably through local management plans. In October 2015, Governor Brown signed Assembly Bill No. 1390, which is legislation that provides a comprehensive adjudication process for all groundwater basins that are regulated under the SGMA. Groundwater basins that have been adjudicated by court decision are subject to management by a court-approved Watermaster.

In May 2011, the California superior court issued an official decision determining that the adjudication area is in a State of overdraft, and established a safe yield for the AVGB of 110,000 acre-feet per year (AFY), although pumping in the area has ranged up to 150,000 AFY. Based on the determined safe yield and the amount that was previously pumped, the 2010 Integrated Urban Waste Management Plan (UWMP) for the

Antelope Valley, dated June 2011, predicted that annual entitled water rights/amounts could be reduced by as much as 35 percent by the adjudication.

On December 23, 2015, Judge Komar issued a final judgment that set in motion court-directed procedures for on the Directors of the AVEK to create a Watermaster Organization empowered to monitor the groundwater basin. In their first meeting of the year following settlement of long-running litigation over water rights adjudication, AVEK, as directed by the court, took action to begin the Watermaster transition process. The judgment specifies that AVEK and Los Angeles County Waterworks District 40 each occupy a seat, along with another public water supplier to be named later.

The judgment confirmed that the Basin is in overdraft and promulgated regulations and procedures to govern groundwater usage in the Basin. It defined Classes of groundwater pumpers, two of which may include groundwater sources for this project – a Non-Pumper Class and a Small Pumper Class. It defined a multi-party ‘Water Master’ to oversee continuing implementation of the judgment and directed the appointment by the Watermaster of a Water Engineer, defining his duties. The Watermaster and a Water Engineer are in place and are enforcing and implementing the Adjudication.

Any use of groundwater in the Basin, which includes multiple individual parcels, must be compliant with the Adjudication Judgment, and coordinated with the Watermaster as required.

In contrast, to the AVGB, the FVGB is not subject to a court adjudication. Based on low population density, negative growth projections, low numbers of private and public supply wells, and the lack of irrigated agriculture within the FVGB, it is designated as a low-priority basin by the California Department of Water Resources (DWR). As a low-priority basin, the FVGB is not required to develop a groundwater sustainability plan in accordance with the SGMA and there is no existing groundwater management plan applicable to the basin. Groundwater pumping within the FVGB peaked in the 1950s with the cultivation of agricultural crops such as alfalfa, pasture, and field crops, then declined as greater pumping lifts and increasing energy costs made the use of groundwater in the area less economical for agricultural uses. The delivery of SWP water to the region starting in 1972 also decreased farmers’ reliance on groundwater for irrigation. Agriculture within the FVGB largely ceased by the late 1970’s. Groundwater within the FVGB is currently extracted to support domestic, industrial, renewable energy, and limited municipal demands (Dudek, 2018a).

4.10.3 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA required states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint – source discharges to surface water. Those discharges are the regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine RWQCBs. The project site is within the Lahontan

RWQCB. Projects that disturb one or more acres, including the proposed project, are required to obtain NPDES coverage under the Construction General Permits.

Section 401, Water Quality Certification. Section 401 of the CWA requires that, prior to issuance of any federal permit or license, any activity, including river or stream crossing during road, pipeline, or transmission line construction, which may result in discharges into waters of the U.S., must be certified by the state, as administered by the RWQCB. This certification ensures that the proposed activity does not violate state and/or federal water quality standards.

Section 402, National Pollutant Discharge Elimination System. Section 402 of the CWA authorizes the State Water Resources Control Board (SWRCB) to issue a NPDES General Construction Storm Water Permit (Water Quality Order 2009-0009-DWQ), referred to as the General Construction Permit. Construction activities can comply with and be covered under the General Construction Permit provided that they:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters.
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs.

NPDES regulations are administered by the Lahontan RWQCB at the project site.

Section 404, Discharge of Dredged or Fill Materials. Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material in waters of the U.S., including wetlands. For purposes of section 404 of the CWA, the limits of non-tidal waters extend to the ordinary high water line, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil, and presence of debris. When an application for a Section 404 permit is made the applicant must show it has:

- Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable;
- Minimized unavoidable impacts on waters of the U.S. and wetlands; and
- Provided mitigation for unavoidable impacts.

Section 404 of the CWA requires a permit for construction activities involving placement of any kind of fill material into waters of the U.S. or wetlands. A water quality certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for water quality certification (or waiver thereof) from the Lahontan RWQCB. Project activities would adhere to state and federal water quality standards and would be in compliance with Sections 401 and 404 of the CWA.

Section 303, Water Quality Standards and Implementation Plans. Section 303(d) of the CWA (33 U.S. Code 1250, et seq., at 1313(d)) requires states to identify “impaired” water bodies as those which do not meet water quality standards. States are required to compile this information in a list and submit the list to the U.S. Environmental Protection Agency for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of total maximum daily loads (TMDL) requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

National Flood Insurance Act

FEMA is responsible for managing the National Flood Insurance Program (NFIP), which makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. The NFIP, established in 1968 under the National Flood Insurance Act, requires that participating communities adopt certain minimum floodplain management standards, including restrictions on new development in designated floodways, a requirement that new structures in the 100-year flood zone be elevated to or above the 100-year flood level (known as base flood elevation), and a requirement that subdivisions be designed to minimize exposure to flood hazards.

To facilitate identifying areas with flood potential, FEMA has developed FIRMs that can be used for planning purposes, including floodplain management, flood insurance, and enforcement of mandatory flood insurance purchase requirements. Kern County is a participating jurisdiction in the NFIP and, therefore, all new development must comply with the minimum requirements of the NFIP.

State

Department of Water Resources

The major responsibilities of the California Department of Water Resources (DWR) include preparing and updating the California Water Plan to guide development and management of the state's water resources; planning, designing, constructing, operating, and maintaining the State Water Resources Development System; regulating dams; providing flood protection; assisting in emergency management to safeguard life and property; educating the public; and serving local water needs by providing technical assistance. In addition, DWR cooperates with local agencies on water resources investigations, supports watershed and river restoration programs, encourages water conservation, explores conjunctive use of ground and surface water, facilitates voluntary water transfers, and, when needed, operates a state drought water bank.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), passed in 1969, requires protection of water quality by appropriate designing, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The SWRCB is the primary State agency responsible for protecting the quality of the State's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility for implementing the Clean Water Act Sections 401 through 402 and 303(d) to the SWRCB and the nine RWQCBs.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals. The basin plans are updated every 3 years. Compliance with basin plans is primarily achieved through implementation of the NPDES, which regulates waste discharges as discussed above.

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality

of the waters of the State, file a report of waste discharge. Absent a potential effect on the quality of waters of the State, no notification is required. However, the RWQCB encourages implementation of BMPs similar to those required for NPDES storm water permits to protect the water quality objectives and beneficial uses of local surface waters as provided in the Lahontan Region Water Quality Control Plan (Basin Plan) (RWQCB, 2016).

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) requires the formation of local-controlled groundwater sustainable agencies in high- and medium-priority groundwater basins. These groundwater sustainability agencies are responsible for developing and implementing a Groundwater Sustainability Plan (GSP) to ensure the basin is operated within its sustainable yield without causing undesirable results. The FVGB is currently designated as a low priority basin under SGMA. Thus, the agencies within the region are not subject to SGMA requirements for the groundwater basin at this time. However, a number of suppliers including Mojave Public Utilities District (MPUD) initiated efforts to prepare the region for development of a GSP but the basin is not required to comply with SGMA.

Streambed Alteration Agreement (California Fish and Game Code)

California Fish and Game Code Section 1602 protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the California Department of Fish and Wildlife (CDFW) in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, and requires any person, state or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

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

During final engineering and design of a project, if it is determined that any project-related actions would have the potential to necessitate a streambed alteration agreement, such an agreement would be prepared and implemented prior to construction of the project, thus maintaining compliance with Section 1602 of the California Fish and Game Code. A streambed alteration agreement is required if the CDFW determines the activity could substantially adversely affect an existing fish and wildlife resource. The agreement includes measures to protect fish and wildlife resources while conducting the project. The CDFW must comply with CEQA before it may issue a final lake or streambed alteration agreement; therefore, the CDFW must wait for the lead agency to fully comply with CEQA before it may sign the draft lake or streambed alteration agreement, thereby making it final.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation

measures related to hydrology and water quality name. The policies and implementation measures in the Kern County General Plan related to hydrology and water quality that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Land Use, Open Space, and Conservation Element

1.3. Physical and Environmental Constraints

Policies

- Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.
- Policy 8: Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.
- Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.
- Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.
- Policy 11: Protect and maintain watershed integrity within Kern County.

Implementation Measures

- Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.
- Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.
- Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.
- Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

1.9. Resources

Policy

Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.

1.10. General Provisions, 1.10.1. Public Services and Facilities

Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

1.10.6. Surface Water and Groundwater

Policies

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.

Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

Implementation Measure

Measure Y: Promote efficient water use by utilizing measures such as:

- (i) Requiring water-conserving design and equipment in new construction;
- (ii) Encouraging water-conserving landscaping and irrigation methods; and
- (iii) Encouraging the retrofitting of existing development with water conserving devices.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The implementation measure in the Mojave Specific Plan for hydrology and water quality applicable to the project is provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 3. Land Use

Policy

Policy 3.6.3 New development shall provide adequate flood control to protect properties within the 100-year floodplain.

Chapter 4. Conservation Element

Objective

Objective 4.2 Maintain groundwater quality to allow local resources to meet local needs.

Policies

Policy 4.2.1 Support regional efforts by the South Lahontan Regional Water Quality Control Board to improve and protect water quality. Promote compliance with the measures contained in the California Water Code and other requirements.

Policy 4.2.2 If required, new development projects shall implement Best Management Practices (BMPs) under the National Pollution Discharge Elimination System (NPDES) permit. These practices are designed to reduce pollution runoff during construction of new projects and rehabilitation projects. Investigate and implement methods as appropriate over time to address the control of pollutants stormwater runoff from development sites, and to encourage the recycling of runoff for groundwater recharge and similar beneficial purposes.

Chapter 9. Seismic and Safety Objectives and Policies

Objective

Objective 9.2 Prevent loss of life, reduce personal injuries and property damage, and minimize economic loss resulting from flood hazards.

Policies

- Policy 9.2.1 Require new construction within a special flood hazard area, as specified on Flood Insurance Rate Maps (FIRMs) (shown on the Physical Constraints Overlay Map in this Plan), to conform to the Kern County Floodplain Management Ordinance.
- Policy 9.2.3 Investigate and mitigate flood hazards, or locate development away from such hazards, to preserve life and protect property.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. The general provision in the West Edwards Road Settlement Specific Plan for hydrology and water quality applicable to the project is provided below. The West Edwards Road Settlement Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the West Edwards Road Settlement Specific Plan are incorporated by reference.

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

- Policy 1.1.3.3 Development shall occur outside areas identified as primary floodways. All development projects will incorporate measures to ensure that the proposed project will not be hazardous, increase flood depth so velocities, or cause water quality to deteriorate.

Implementation Measures

- Measure 1.1.4.1 Site development shall be accomplished in compliance with Kern County Flood Damage Prevention Ordinance and Kern County Zoning Ordinance. Development prohibitions shall be the same in those ordinances.
- Measure 1.1.4.3 Drainage improvement plants shall be approved for projects pursuant to the Kern County Zoning Ordinance.

Kern County Zoning Ordinance***Chapter 19.70. Floodplain Combining District***

Section 19.70.040 prohibits the following uses in the Floodplain Combining District, as applicable to the proposed project:

Implementation Measures

- Measure B: All uses that will likely increase the flood hazard or affect the water-carrying capacity of the floodplain beyond the limits resulting from encroachment as specified in Section 19.70.130.

- Measure C: Dumping, stockpiling, or storage of floatable substances or other materials which, in the opinion of the Kern County and Survey Services Department, will add to the debris loads of the stream or watercourse, unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with Section 19.70.130.
- Measure D: Storage of junk or salvage operations.
- Measure E: Oil storage tanks or processing equipment, unless flood-proofed or sufficiently elevated above the Base Flood Elevation, as determined by the Kern County Public Works Department.
- Measure F: Individual sewage disposal systems (e.g., septic tank systems), unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with the requirements of the Kern County Health Department so as to minimize infiltration of floodwaters into the systems and discharges from the systems into the floodwaters.
- Measure G: Sources of water supply (e.g., wells, springs) unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with the requirements of the Kern County Health Department so as to minimize infiltration of floodwaters.

Kern County Code of Building Regulations

Grading Code (Chapter 17.28)

Chapter 17.28 Kern County Grading Code. Requirements of the Kern County Grading Code will be implemented. A grading permit will be obtained prior to commencement of construction activities. Of particular note with respect to hydrology and water quality is Section 17.28.140, Erosion Control, which addresses the following:

- **Slopes.** The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.
- **Other Devices.** Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.
- **Temporary Devices.** Temporary drainage and erosion control shall be provided as needed at the end of each work day during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

Kern County Floodplain Management Ordinance (17.48)

Any construction that takes place within areas of special flood hazards, areas of flood-related erosion hazards, and areas of mudslide (i.e., mudflow) hazards within the jurisdiction of unincorporated Kern County will comply with the requirements and construction design specifications of this ordinance. Any required development permits will be obtained prior to commencement of construction activities. Sections 17.48.250 through 17.48.350 of the ordinance elaborate on the standards of construction in the special flood hazards area. This includes the requirement of one-foot of freeboard clearance above the calculated maximum flood depths for all facilities within a 100-year floodplain.

Kern County Development Standards

The Kern County Development Standards apply to all developments within Kern County that are outside of incorporated cities. These standards establish minimum design and construction requirements that will result in improvements that are economical to maintain and will adequately serve the general public. The requirements set forth in these standards are considered minimum design standards and will require the approval of the entity that will maintain the facilities to be constructed prior to approval by the County.

Kern County Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the project proponent to provide background information on construction activities. Applicants must apply for the permit under one of the following four conditions:

1. All stormwater is retained onsite and no storm water runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.
2. All stormwater runoff is not retained on site, but does not discharge to a Water of the United States (i.e., drains to a terminal drainage facility). Therefore, a SWPPP has been developed and BMPs must be implemented.
3. All stormwater runoff is not retained on site, and the discharge is to a Water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control Board prior to issuance of the building permit. Also, a SWPPP has been developed and BMPs must be implemented.
4. Construction activity is between 1 to 5 acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

4.10.4 Impacts and Mitigation Measures

Methodology

This section analyzes impacts on hydrology and water quality from the implementation of the project based on changes to the environmental setting as described above, identified drainage conditions in the project site, and the current regulatory framework. The project's potential impacts to hydrology and water quality have been evaluated using the Hydrology and Water Quality Report (Dudek, 2019a) and the Water Supply Assessment (Dudek, 2019b) prepared for the project, located in Appendices I and L1 of this EIR, respectively. As well as a variety of resources, including multiple online sources and published documents. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project could have a significant impact on hydrology and water quality if it would:

- a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
- b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:
 - i. Result in substantial erosion or siltation onsite or offsite;
 - ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
 - iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
 - iv. Impede or redirect flood flows;
- d. Result in a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation;
- e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Project Impacts

Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise degrade water quality.

Construction

Project construction would include mowing, excavation, and grading portions of the project site. Conventional grading would be performed selectively throughout the project site. However, because the project area is relatively flat, it is anticipated that grading would be limited in most areas. Grading and excavation would also be required for the proposed foundations of the O&M building and other infrastructure such as the energy storage system, inverters and transformers. Installation of the solar panels would not require grading of the site with the exception of roads to meet fire code standards. These activities would affect current drainage patterns and erosion on the project site; however, designing the site grading and access roads in compliance with County standards would prevent substantial alterations to drainage patterns and erosion within the project site. Impervious surfaces from construction of access roads, PV module foundations, substations, and other improvements would be relatively limited compared to the overall perviousness of the remaining 2,006-acre project site.

Potential impacts on water quality from erosion and sedimentation are expected to be localized and temporary during construction. Stormwater runoff from the project site would not discharge to waters of the United States since the project area is within a watershed that is not hydrologically connected to a navigable waterway. However, according to the Kern County Public Works Department NPDES applicability form, the project would be required to implement a SWPPP during construction. Per Mitigation Measure MM 4.7-3 in Section 4.7, *Geology and Soils*, the SWPPP would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality, and would be applicable to all areas of the project, including the solar fields and the gen-tie line. In addition, prior to the commencement of construction activities, the project proponent would be required to adhere to the requirements of the Kern County Grading Code. This includes implementation of various measures designed to prevent erosion and control drainage onsite, thereby further preventing the potential sedimentation and subsequent degradation of stormwater.

During project construction, any activity that results in the accidental release of hazardous or potentially hazardous materials could result in water quality degradation. Further, any construction activity that results in the accidental release of pollutants, hazardous or potentially hazardous materials could result in water quality degradation. Materials that could contribute to this impact include, but are not limited to, diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, cement slurry, and other fluids utilized by construction and maintenance vehicles and equipment. Motorized equipment could leak hazardous materials such as motor oil, transmission fluid, or antifreeze due to inadequate or improper maintenance, unnoticed or unrepaired damage, improper refueling, or operator error.

As noted in Section 4.9, *Hazards and Hazardous Materials*, of this EIR, Mitigation Measure MM 4.9-1 would require the project proponent to provide a Hazardous Materials Business Plan that would delineate hazardous material and hazardous waste storage areas; describe proper handling, storage, transport, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction;

and establish public and agency notification procedures for spills and other emergencies, including fires. With implementation of this mitigation measure, the potential for the accidental release of hazardous materials would be reduced. Therefore, with implementation of Mitigation Measures MM 4.7-3 and MM 4.9-1, impacts to water quality would be less than significant during construction.

Operation

The solar facilities would require limited use of certain hazardous materials for routine operations and maintenance. Accidental release of such materials could include fuels, paints, coatings, lubricants, and transformer oil, which would result in water quality degradation should the materials become entrained in stormwater. This would result in a potentially significant impact on water quality. However, as described above, implementation of Mitigation Measure MM 4.9-1 would require the implementation of a Hazardous Materials Business Plan that would ensure safe handling of hazardous materials onsite and provide the means for prompt cleanup in the event of an accidental hazardous material release. There would be no hazardous materials associated with the interconnections to the gen-tie lines.

Water quality could also be degraded by non-hazardous materials during operation activities. During dry periods, impervious surfaces (i.e., hardscape surfaces such as foundations and buildings) can collect greases, oils, and other vehicle-related pollutants. During storm events, these pollutants can mix with stormwater and degrade water quality. However, per Mitigation Measure MM 4.10-1, a drainage plan would be prepared in accordance with the Kern County Development Standards and Kern County Code of Building Regulations. Therefore, the drainage plan would include post-construction structural and nonstructural BMPs that could include features such as drainage swales for collection of runoff prior to offsite discharge. Adherence to these requirements would minimize potential for operation period water quality degradation. Apart from infrequent cleaning of panels with water that would result in minimal runoff, no other discharges would occur when the project is operational. Therefore, with the implementation of Mitigation Measures MM 4.9-1 and MM 4.10-1, project operation would not violate water quality standards or waste discharge requirements, or otherwise degrade water quality.

Mitigation Measures

Implementation of Mitigation Measures MM 4.7-3 and MM 4.9-1 would be required (see Section 4.7, *Geology and Soils*, and Section 4.9, *Hazards and Hazardous Materials*, for text of Mitigation Measures MM 4.7-3 and MM 4.9-1, respectively).

MM 4.10-1: Prior to the issuance of a grading permit, the project proponent/operator shall complete a final drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study shall include, but is not limited to the following:

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.
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.
3. The drainage plan would include engineering recommendations to be incorporated into the project design and applied within the site boundary. Engineering recommendations

will include measures to offset increases in stormwater runoff that would result from the project, as well as implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding onsite or offsite.

4. The final design of the solar arrays shall include one-foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Solar panel sites located within a 100-year floodplain shall be installed on piers so that the panels are located one-foot above the calculated maximum flood depths or graded to direct potential flood waters without increasing the water surface elevations more than one foot or as required by Kern County's Floodplain Management Ordinance.
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.

Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.7-3, MM 4.9-1, and MM 4.10-1, impacts would be less than significant.

Impact 4.10-2: The project would 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.

The project site currently has existing onsite water wells. Construction of the project is anticipated to use approximately 200 AF of water over the construction period of approximately 18 months (equivalent to 133 AF per year (AFY)), and the project's operational water requirement is expected to be approximately 30 AFY. The water demands would be met by developing onsite groundwater (either through redeveloping existing wells, or drilling a new well), which would draw from the FVGB, or by importing water from MPUD or California City, each of whom derives all or most of its supply from the underlying FVGB. If the project is supplied by MPUD, the water delivered may be sourced from treated surface water and/or banked groundwater purchased from AVEK (up to 200 AF during construction); treated groundwater from within MPUD's service area; and/or untreated groundwater from MPUD's Well 30, prior to its anticipated conversion to a potable supply well by 2020 (Dudek, 2019b). Construction water could also be supplied to the proposed project by California City. In all of these cases, groundwater would be wholly or partially used to supply the project's demands.

Water supply for the Fremont Valley Region is obtained from two main sources: groundwater pumped from the FVGB (DWR Basin No 6–46) and deliveries of State Water Project (SWP) water through the East Branch of the California Aqueduct. The amount of water stored in the FVGB is relatively large compared to the proposed demand associated with the project (Dudek, 2019b). According to the water supply assessment for the project, the commitment from MPUD to supply the project with water from Well 30, and data supporting the ability of the underlying aquifer to support development of an onsite groundwater well without adverse effects, there is sufficient water available for the proposed project through 2040, including single-dry and multiple-dry water years (Dudek, 2019b)

The project would result in an increase in impervious surfaces on the site from the equipment foundations, as well as the operations and maintenance buildings and energy storage facilities. The access roads could also increase impervious surface areas if paved or compacted gravel base is effectively impervious. Although the panels and panel foundations are impervious, stormwater falling on the panels would drip off and infiltrate into the surrounding pervious ground surfaces. Otherwise, even if the access roads are paved, the majority of the site would remain pervious and, thus, would not substantively interfere with groundwater recharge. Therefore, the project would leave large areas of pervious surfaces intact that would continue to absorb stormwater runoff and would thus not result in a significant reduction of groundwater infiltration rates. The project would have a less than significant impact on groundwater supplies related to groundwater recharge at the site.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.10-3: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would result in substantial erosion and/or sedimentation on-site or off-site.

Signs of surface flow within the project site are limited to poorly defined/shallow swales, which are often apparent only by an increase in shrub density, and discontinuous ephemeral channels primarily located along the medians of paved roads, within unmaintained dirt roads, and alongside the railroad embankment. Throughout the project site, drainage features are scattered and discontinuous, in that defined channels can abruptly become indistinguishable from the valley floor as concentrated flow is dispersed as sheet flow. This morphology suggests that there is a propensity for surface runoff events to be both brief and infrequent, with rapid infiltration into the sandy substrate, and/or shallow ponding in low-lying areas quickly followed by high evaporation. The hummocky terrain has caused surface flows to be impounded in small ephemeral playas. A well-defined continuous channel does not take shape until approximately 1.5 miles downstream from the project's easternmost boundary. This channel parallels Mojave Boulevard until it reaches the community of Edwards Air Force Base where flow is conveyed through drainage ditches paralleling streets until it reaches Rogers Dry Lake.

The project would include limited grading such that off-site flow that enters the site would continue to flow through the site much as it does currently. However, installation of the proposed facilities discussed in Chapter 3, *Project Description*, of this EIR could alter existing on-site drainage patterns and flowpaths to some degree and could alter the way that stormwater from upgradient flows across the project site during major events. Given the unconsolidated and erosive nature of soils within the project area and its vicinity, these changes could result in increased erosion on site. Additionally, if the project controls stormwater runoff to the site through berms or other engineered channels, increased concentration of flows could cause head cutting, scour, and other erosional processes. Increases in erosion could result in sedimentation downstream. Finally, the new impervious surfaces created by development of the project would generate

additional stormwater runoff on site. This could exacerbate potential erosion and sedimentation on site or downstream.

As described above, the proposed project would implement a SWPPP per Mitigation Measure MM 4.7-3 that would require preservation of existing vegetation and topography to the maximum extent feasible, as well as include erosion and sediment control BMPs designed to prevent erosion and sedimentation from occurring during project construction. Compliance with the Kern County Grading Code requires erosion prevention measures be implemented. With regard to erosion and sedimentation during project operation caused by increased runoff from impervious surfaces, large amounts of pervious ground surface would remain during project operation that would continue to absorb the majority of surface flows. Further, Mitigation Measure MM 4.10-1 would require the submittal of a final drainage plan for the project and would evaluate and minimize potential increases in runoff and ensure that the retention basins and other stormwater management features are implemented consistent with existing regulatory requirements. With implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1, impacts would be less than significant.

Mitigation Measures

Implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1 would be required (see Section 4. 7, *Geology and Soils*, for text of Mitigation Measures MM 4.7-3).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1, impacts would be less than significant.

Impact 4.10-4: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in flooding onsite or offsite.

As discussed under Impact 4.10-3 above, grading and installation of project facilities could alter existing onsite drainage patterns and flowpaths. This could cause localized flooding during major events along the margins of the project area, or within the project area, depending upon how stormwater is managed under final project design. During operation of the project, large amounts of pervious ground surface would remain onsite that would continue to absorb the majority of surface flows. According to the hydrology study for the site, the modeled flow patterns on the site under the proposed conditions would result in a measured increase in peak discharge for two of the four drainage basins identified on the site (Dudek, 2019a). Basin 100 would experience an increase in peak discharge of just 0.4 percent (7.3 cubic feet per second [cfs]), while Basin 400 would experience a 1.2 percent increase (9.5 cfs). For total runoff volume, there is an anticipated increase in runoff volume only from Basins 100 (4.1 acre-feet, or 0.8 percent) and 400 (3.4 acre-feet, or 2.2 percent). The total increase from the four drainage basins, to the point where flow coalesces in a channel 1.5 miles downstream from the project site, is just an estimated 0.1 percent increase in both peak discharge (16.8 cfs) and total runoff volume (7.5 acre-feet). In addition, Mitigation Measure MM 4.10-1 would require the preparation of a final drainage plan prior to issuance of a grading permit that would detail the design and implementation of any necessary stormwater control features to onsite that would ensure runoff is not substantially increased by the proposed facilities. Mitigation Measure MM 4.10-1 would also require that grading for the project facilities does not alter the ground surface such that the extent of flooding

during flood events is substantially increased. Therefore, with the implementation of Mitigation Measure MM 4.10-1, project impacts related to flooding would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.10-1 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

Impact 4.10-5: The project would create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

The project site is located in a remote, rural region with no existing or planned stormwater infrastructure. There are no existing stormwater drainage systems on the project site, and no stormwater drainage systems are proposed as part of the project. The project would be required to adhere to Kern County Public Works Department storm water requirements, which include measures to address stormwater controls on both management of runoff volume and water quality, including controlling erosion and protection of water quality of stormwater runoff. During operation, most of the project site would remain as pervious surfaces thus allowing infiltration of the runoff produced by the new minor impervious surfaces. The project would not exceed the capacity of any existing or planned infrastructure and the implementation of Mitigation Measure MM 4.10-1 would minimize potential increases in stormwater flow and other project-induced changes to drainage patterns to less-than-significant levels.

Mitigation Measures

Implementation of Mitigation Measure MM 4.10-1 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

Impact 4.10-6: The project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.

As noted in the Setting section above, the FEMA FIRMs show that approximately 25 acres of the northern section and 100 acres of the southern section of the project site are located within a FEMA Special Flood Hazard Area (Dudek, 2019a). The project would introduce structures on the project site such as the operation and maintenance building and the solar panel supports that could impede or redirect flood flows. However, most of the improvements of the project consist of solar panels, mounted on steel support posts which spread out across the project site and would not be expected to impede or redirect flood flows. The hydrology study for the site, determined that the anticipated increase in peak discharge rates and total volume during the 100-year 24-hour storm event would only increase 0.1 percent over the existing conditions. In addition, for other improvements including the operations and maintenance building, implementation of Mitigation Measure MM 4.10-1 would require preparation of a drainage plan that would design project facilities to have one-foot

of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Additionally, per Mitigation Measure MM 4.10-1, grading for the project would be designed so that water surface elevations during flood events would not be increased by more than one foot. Therefore, impacts related to flooding would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.10-1 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

Impact 4.10-7: The project would result in a flood hazard, tsunami, or seiche zone, and risk release of pollutants due to project inundation.

As described above, the project site does include 25 acres in the northern site and 100 acres in the southern site that are in the 100-year flood zone. As noted above, implementation of the drainage plan required by Mitigation Measure MM 4.10-1 would ensure that improvements that would include the storage of hazardous materials would be required to have at least one foot of freeboard above the calculated flood depth. As discussed more thoroughly in Section 4.9, *Hazards and Hazardous Materials*, the project would not include the use, storage, or disposal of significant quantities of hazardous materials. In addition, the project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards. Therefore, considering the limited area of the site that is in the flood hazard area, the limited amount of storage of hazardous materials at the site, and with the implementation of the drainage plan required by Mitigation Measure MM 4.10-1, which would provide flood protection measures, the potential for release of pollutants due to project inundation would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.10-1 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

As noted above, the project site is located within the South Lahontan RWQCB and is subject to the applicable requirements of the Basin Plan administered by the RWQCB in accordance with the Porter-Cologne Water Quality Control Act. As discussed above, the project would include required BMPs and drainage control requirements that would be consistent with the Basin Plan.

The project site is also located within the FVGB, which is not an adjudicated groundwater basin. The FVGB is currently designated as a low priority basin under SGMA. Thus, the agencies within the region are not subject to SGMA requirements for the groundwater basin at this time and are not required to prepare and

implement a sustainable groundwater management plan. However, a number of suppliers including MPUD initiated efforts to prepare the region for development of a GSP, nonetheless. As discussed above, the commitment from MPUD to supply the project with water from Well 30, and data supporting the ability of the underlying aquifer to support development of an onsite groundwater well without adverse effects, there is sufficient water available for the proposed project through 2040, including single-dry and multiple-dry water years (Dudek, 2019b). Therefore, the project would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, of this EIR, 73 cumulative projects are proposed throughout the Antelope Valley in Kern County and in the desert portion of Kern County outside the Antelope Valley, and an additional 27 cumulative projects proposed throughout Lancaster, Palmdale, and Unincorporated Los Angeles County. Of the approximately 73 total projects in Kern County, 43 would be located within 6 miles of the project site and 35 would be located within 1 mile of the project site. All projects except for those in Lancaster, Palmdale, and Unincorporated Los Angeles County are located within the Antelope Valley Hydrologic Unit and FVGB.

Similar to the proposed project, all cumulative projects would not discharge to waters of the United States due to their location within the Antelope Valley, which is a closed basin with no outlet to the Pacific Ocean. All projects that would not retain all runoff onsite would be required to prepare a SWPPP, just as with the proposed project under Mitigation Measure MM 4.7-3, which would include BMPs designed to prevent the mixture of sediment and other pollutants with stormwater and degrading water quality. Furthermore, the proposed project would implement a Hazardous Materials Business Plan as part of Mitigation Measure MM 4.10-1 that would require appropriate handling of hazardous materials onsite to ensure they do not come into contact with stormwater and affect water quality. All other projects in the vicinity that would handle hazardous materials would also be required to comply with hazardous material regulations. Therefore, cumulative scenario impacts associated with water quality degradation would not be cumulatively considerable, and the project would not contribute to a cumulative impact on water quality.

With regard to water supply, the proposed project would have some options but would primarily obtain its water supply from the FVGB. The Basin is not in a state of overdraft and currently considered a low priority basin by the SGMA. The rating is based on low population density, negative growth projections, low numbers of private and public supply wells, and a lack of irrigated agriculture within the FVGB. The Water Supply Assessment determined that there are sufficient supplies for both proposed project construction and operation until 2040. Further, the Basin has relatively recently (December 2018) developed a groundwater management plan for the basin which is considered a preliminary step towards developing a Groundwater Sustainability Plan (GSP). GSPs are currently only required for medium and high priority basins under SGMA, but low priority basins are anticipated to eventually need a GSP. Groundwater levels appeared to

stabilize after the 1980s after declining levels of the 1950s and 60s and have started recovering since that time as a result of decreased groundwater pumping for agriculture and imported surface water deliveries to urban users being introduced to the Plan area. Therefore, considering the relatively low demand associated with solar projects in general and the increasing monitoring and management of the basin through development and implementation of a groundwater management plan, together with the projected surplus for water supplies as determined in the Water Supply Assessment, the proposed project would not combine with the cumulative projects to create an adverse effect to water supplies of the FVGB. The cumulative impact would be less than significant.

With respect to erosion, drainage, and flooding, the project would implement Mitigation Measure MM 4.10-1, which would minimize direct impacts on erosion, drainage, and flooding. It is anticipated that other cumulative scenario projects would be required to implement similar measures, in order to minimize erosion, drainage, and flooding related impacts. Additionally, drainage related impacts from cumulative scenario projects would be primarily localized. Therefore, cumulative scenario impacts on erosion, drainage, and flooding are not anticipated to be cumulatively considerable, and the project would not contribute to a cumulative impact on flooding, erosion, or drainage.

Mitigation Measures

Implementation of Mitigation Measures MM 4.7-3, MM 4.9-1, and MM 4.10-1 would be required (see Section 4.7, *Geology and Soils*, and Section 4.9, *Hazards and Hazardous Materials*, for text of Mitigation Measures MM 4.7-3 and MM 4.9-1, respectively).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-3, MM 4.9-1, and MM 4.10-1, impacts would be less than significant.

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4.11.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of the project for impacts that may affect land use and planning. It also describes the environmental and regulatory setting and discusses the need for mitigation measures where applicable. The information in this section is based primarily, but not exclusively on a review of the project's consistency with the Kern County General Plan, the Mojave Specific Plan, the West Edwards Road Settlement Specific Plan, and the Kern County Zoning Ordinance.

4.11.2 Environmental Setting

Onsite Land Uses

The project site is currently vacant and undeveloped and there are no residences or other structures on the project site. Elevations across the project site range from approximately 2,660 feet above mean sea level in the northwest portion of the site to approximately 2,500 feet above mean sea level in the southeast portion of the site.

As discussed in Section 4.1, *Agriculture and Forest Resources*, the project site is not designated by the California Department of Conservation (DOC) as prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The DOC designates the project site as “Nonagricultural and Natural Vegetation”, “Grazing Land”, and “Vacant or Disturbed Land” (DOC 2018). APN 429-030-02, which is approximately 320 acres of the project site, is within the Kern County Agricultural Preserve Number 24 boundary. No lands within the project site are subject to Williamson Act Land Use contracts.

The majority of the project site is not located within a Federal Emergency Management Agency (FEMA) designated flood zone. However, there are portions of both the northern and southern project site within FEMA Zone A, indicating those areas are within the 100-year floodplain as depicted in Figure 3-6, *FEMA Flood Zone Hazard*.

Based on a review of records maintained by the California Department of Conservation/Division of Oil, Gas and Geothermal Resources (DOGGR), wells were not identified on the project site (<https://maps.conservation.ca.gov/doggr/wellfinder/#close>). Records maintained by the Kern County Assessor indicated there is one Mineral Rights APN within the boundaries of the project site.

The proposed solar facility would be located within the Airport Influence Areas of the Mojave Air and Space Port, which is operated by the East Kern Airport District (EKAD) and within the vicinity of Edwards AFB, which is a military aviation installation. Section 4.9 of the ALUCP addresses the Mojave Air and Space Port and land uses and procedures relative to its aviation and including height restrictions, and other compatibility criteria. In addition, Section 4.17.3 of the ALUCP requires that the Edwards AFB be notified of development that falls within identified notification categories. Figure 3-8 in Chapter 3, *Project Description*, of this EIR, shows the project site and its vicinity, with respect to the ALUCP zones.

As shown in **Table 4.11-1**, *Project Site and Surrounding Land Use Designations and Zoning Classifications*, below, the project site is within the administrative boundaries of both the Mojave Specific

Plan and West Edwards Road Settlement Specific Plan areas. The project site is designated as Mojave Specific Plan Map Codes 8.5 (Resource Management – Minimum 20-Acre Size) and 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope). A portion of the project is designated as West Edwards Road Settlement Specific Plan Map Code 8.5 (Resource Management – Minimum 20-Acre Size). The existing Mojave Specific Plan and West Edwards Road Settlement Specific Plan designations are shown in Chapter 3, *Project Description*, Figure 3-10 of this EIR.

The Kern County Zoning Ordinance designates the project site as zoned A (Exclusive Agriculture), A-1 (Limited Agriculture), and A-1 H (Limited Agriculture – Airport Approach Height Combining). The project site would be rezoned to A or A H, with the exception of those portions which are already in the A Zone District. According to the Kern County Zoning Ordinance Section 19.12.030 G, solar energy electrical generators, when not accessory to a permitted or conditionally permitted use, are permitted within the A Zone District subject to the approval of a Conditional Use Permit (CUP). The proposed zoning classifications of the project site are consistent with the current Mojave Specific Plan and West Edwards Road Settlement Specific Plan Map Code designations, as solar energy-generating facilities are an allowable use under the 8.5 (Resource Management – Minimum 20-Acre Size) designation.

Surrounding Land Uses

As described in Table 4.11-1, *Project Site and Surrounding Land Uses*, above, surrounding land uses are composed primarily of undeveloped land, scattered single-family homes, and other solar energy development. Existing development in the project vicinity includes single-family homes, rural access roads, scattered rural residences, wind and solar energy, federal lands (Edwards AFB) and scattered commercial uses. The nearest populated areas to the project site are the unincorporated community of Mojave, the unincorporated community of Rosamond, and the City of Tehachapi, which are approximately 1.5 miles northeast, 7.5 miles southeast, and 14 miles northwest of the project site, respectively. The Mojave Air and Space Port is north of State Route (SR) 58, which is approximately 0.2 miles north of the northern site and 2.3 miles north of the southern site. SR-14 is approximately 1.3 miles west of the northern site and 5.5 miles west of the southern site. Edwards Air Force Base is south of the project site. A portion of the Pacific Crest Trail (PCT) is approximately 3.16 miles north of the gen-tie line corridor, approximately 8.5 miles northwest of the northern site, and approximately 14.6 miles northwest of the southern site.

As with the proposed project, surrounding land uses are designated 6.2 (General Commercial), 7.1 (Light Industrial), 3.3/2.11 (Other Facilities/Burn Dumps), 1.1 (State or Federal Land), 3.3 (Other Facilities), 8.5 (Resource Management – Minimum 20-Acre Size), 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope), 3.4 (Solid Waste Disposal Facility), 3.4.1 (Solid Waste Disposal Facility Buffer), 7.3/2.5 (Heavy Industrial -Flood Hazard), and 5.6 (Residential – Minimum 2.5 Gross Acres/DU). Surrounding land uses are located within the A (Exclusive Agriculture), A FPS (Exclusive Agriculture – Floodplain Secondary), A-1 (Limited Agriculture), A WE (Exclusive Agriculture – Wind Energy), A-1 H (Limited Agriculture -Airport Approach Height Combining), M-1 PD (Light Industrial- Precise Development), M-1 PD FPS (Light Industrial, Precise Development, Floodplain Secondary), M-1 PD H (Light Industrial, Precise Development, Airport Approach Height Combining), M-2 PD H (Light Industrial, Precise Development, Airport Approach Height Combining), MP (Mobilehome Park), E (2½) RS MH (Estate 2.5 Acres – Residential Suburban – Mobile Home), E (5) RS (Estate 5 acres – Residential Suburban), E (10) RS MH (Estate 10 Acres – Residential Suburban – Mobile Home), M-2 PD (Medium Industrial – Precise Development), M-3 PD (Heavy Industrial – Precise Development), and M-3 PD FPS (Heavy Industrial – Precise Development – Floodplain Secondary) Zone Districts.

TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USES

	Site	Existing Land Use	Existing Map Code Designation	Existing Zone Classification
Project Site	Northern Site	Undeveloped	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size)	A (Exclusive Agriculture) A-1 (Limited Agriculture) A-1 H (Limited Agriculture -Airport Approach Height Combining)
	Southern Site	Undeveloped	<i>Mojave Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size) <i>West Edwards Road Settlement Specific Plan:</i> 8.5 (Resource Management – Minimum 20-Acre Size) 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope)	A-1 (Limited Agriculture) A-1 FPS (Limited Agriculture – Floodplain Secondary Combining)
Surrounding Lands	North	Mojave Air and Spaceport; Scattered single-family homes; Scattered commercial; and Undeveloped Vacant Open Apace	3.3/2.11 (Other Facilities/Burn Dumps) 6.2 (General Commercial) 7.1 (Light Industrial)	A-1 (Limited Agriculture) A-1 H (Limited Agriculture -Airport Approach Height Combining) M-1 PD (Light Industrial- Precise Development) M-1 PD FPS (Light Industrial, Precise Development, Floodplain Secondary) M-1 PD H (Light Industrial, Precise Development, Airport Approach Height Combining) M-2 PD H (Light Industrial, Precise Development, Airport Approach Height Combining) MP (Mobilehome Park)
	East	Undeveloped Vacant Open Space	1.1 (State or Federal Land) 3.3 (Other Facilities) 8.5 (Resource Management – Minimum 20-Acre Size) 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope)	A-1 (Limited Agriculture) A-1 H (Limited Agriculture – Airport Approach Height Combining)
	South	Edwards Air Force Base; Undeveloped	1.1 (State or Federal Land)	A-1 (Limited Agriculture)

TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USES

Site	Existing Land Use	Existing Map Code Designation	Existing Zone Classification
Surrounding Lands	West Scattered single-family homes; Scattered commercial; Landfill; PUD Ponds; and Undeveloped Vacant Open Space	3.3 (Other Facilities)	A (Exclusive Agriculture)
		3.4 (Solid Waste Disposal Facility)	A FPS (Exclusive Agriculture – Floodplain Secondary)
		3.4.1 (Solid Waste Disposal Facility Buffer)	A-1 (Limited Agriculture)
		7.3/2.5 (Heavy Industrial -Flood Hazard)	A-1 MH (Limited Agriculture – Mobile Home)
		5.6 (Residential – Minimum 2.5 Gross Acres/DU)	A-1 FPS (Limited Agriculture – Flood Plain Secondary)
		8.5 (Resource Management – Minimum 20-Acre Size)	A WE (Exclusive Agriculture – Wind Energy)
			MP (Mobilehome Park)
			E (2½) RS MH (Estate 2.5 Acres – Residential Suburban – Mobile Home)
			E (5) RS (Estate 5 acres – Residential Suburban)
			E (10) RS MH (Estate 10 Acres – Residential Suburban – Mobile Home)
			M-2 PD (Medium Industrial – Precise Development)
			M-3 PD (Heavy Industrial – Precise Development)
			M-3 PD FPS (Heavy Industrial – Precise Development – Floodplain Secondary)

4.11.3 Regulatory Setting

Federal

West Mojave Plan Habitat Conservation Plan

The West Mojave Plan (Plan) is a habitat conservation plan and federal land use plan amendment that (1) presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel (MGS) and nearly 100 other sensitive plants and animals and the natural communities of which they are a part, and (2) provides a streamlined program for complying with the requirements of the California and federal Endangered Species Acts (CESA and FESA, respectively). The 9,359,070-acre planning area is located to the north of the Los Angeles metropolitan area. The Plan's conservation program applies to both public and private lands within this area. These lands include 3,263,874 acres of BLM-administered public lands, 3,029,230 acres of private lands and 102,168 acres of lands administered by the State of California.

State

There are no applicable state regulations for this issue area.

Local

Land use and planning decisions within and adjacent to the project site are guided and regulated by the Kern County General Plan and Kern County Zoning Ordinance. The Kern County General Plan contains goals, objectives, and policies and provides an overall foundation for establishing land use patterns. For this land use impact analysis, this section lists all relevant goals, objectives, policies, and implementation measures related to the proposed project. The Zoning Ordinance contains regulations through which the General Plan's provisions are implemented. The most relevant regulations pertaining to solar energy development are presented below.

Kern County General Plan

The Kern County General Plan is a policy document designed to provide long-range guidance for planning decisions that affect the growth and resources of unincorporated Kern County. Included in the Kern County General Plan is the Land Use, Open Space, and Conservation Element, which provides for a variety of land uses for future economic growth while also assuring the conservation of Kern County's agricultural, natural, and resource attributes (County of Kern, 2009). Within the Land Use, Open Space and Conservation Element, policy areas are separated by overlay designations, known as "Map Codes", which are identified on the Kern County General Plan maps for each section of the County and include the following categories: (1) non-jurisdictional land (State and federal); (2) environmental constraints overlay; (3) public facilities; (4) non-jurisdictional land (accepted county plan areas, rural communities and specific plan required); (5) residential; (6) commercial; (7) industrial; and (8) resource.

As discussed above, the project site is located within Map Codes 4.1 (Non-jurisdictional land: Accepted County Plan Areas) and is within the boundaries of the Mojave Specific Plan and the West Edwards Road Settlement Specific Plan. The northern project site and a portion of the southern site is within the Mojave Specific Plan and has a Map Code designation of 8.5 (Resource Management – Minimum 20-Acre Size) and 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope). The southern portion of the project site within the West Edwards Road Settlement Specific Plan has Map Code designations of 8.5 (Resource Management – Minimum 20-Acre Size). Each Map Code/overlay area contains specific goals, policies, and implementation measures to guide development within them.

In addition to the Land Use, Open Space, and Conservation Element, the Kern County General Plan includes other elements related to circulation, noise, and energy. Each element establishes goals, policies, and implementation measures that guide planning decisions in unincorporated Kern County. The goals, policies, and implementation measures relevant to the project are listed below.

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

1.3. Physical and Environmental Constraints

Goal

Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.

Policies

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained ((Map Code 2.1 (Seismic Hazard), Map Code 2.2 (Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

Policy 3: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.

Policy 8: Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.

Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.

Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.

Policy 11: Protect and maintain watershed integrity within Kern County.

Implementation Measures

- Measure D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.
- Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.
- Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.
- Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.
- Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

1.4. Public Facilities and Services***Policies***

- Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.
- Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.
- Policy 6: The County will ensure adequate fire protection to all Kern County residents.
- Policy 7: The County will ensure adequate police protection to all Kern County residents.
- Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the CEQA documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Implementation Measures

- Measure B: Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.
- Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.
- Measure D: Involve utility providers in the land use and zoning review process.

Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

1.9. Resources

Goals

- Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.
- Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential for future use.
- Goal 3: To ensure that the development of resource areas minimizes effects of neighboring resource lands.
- Goal 4: Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.
- Goal 5: Conserve prime agricultural lands from premature conversion.
- Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

Policies

- Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.
- Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.
- Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.
- Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.
- Policy 14: Emphasize conservation and development of identified mineral deposits.
- Policy 17: Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.

Implementation Measures

- Measure F: Prime agricultural lands, according to the Kern County Interim-Important Farmland 2000 map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.
- Measure H: Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.

1.10. General Provisions***Goal***

- Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

1.10.1. Public Services and Facilities***Policies***

- Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.
- Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Implementation Measures

- Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.
- Measure D: Involve utility providers in the land use and zoning review process.
- Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

1.10.2. Air Quality

Policies

- Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.
- Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:
- (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
 - (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.
- Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.
- Policy 21: The County shall support air districts efforts to reduce PM10 and PM2.5 emissions.
- Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, state, and local standards.

Implementation Measures

- Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.
- Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:
- a) Minimizing idling time.
 - b) Electrical overnight plug-ins.
- Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:
- a) Pave dirt roads within the development.
 - b) Pave outside storage areas.
 - c) Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.

- d) Use of alternative fuel fleet vehicles or hybrid vehicles.
- e) Use of emission control devices on diesel equipment.
- f) Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
- g) Provide bicycle lockers and shower facilities on site.
- h) Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
- i) The use and development of park and ride facilities in outlying areas.
- j) Other strategies that may be recommended by the local Air Pollution Control Districts.

Measure J: The County should include PM10 control measures as conditions of approval for subdivision maps, site plans, and grading permits.

1.10.3. Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

1.10.5. Threatened and Endangered Species

Goals

Goal 1: Ensure that the County can accommodate anticipated future growth and development while a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

Policies

- Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.
- Policy 28: County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.
- Policy 29: The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.
- Policy 31: Under the provisions of the California Environmental Quality Act, the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document is prepared.
- Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measures

- Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.
- Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.

1.10.6. Surface Water and Groundwater***Policies***

- Policy 34: Ensure that water quality standards are met for existing users and future development.
- Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.
- Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.
- Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

Implementation Measure

- Measure Y: Promote efficient water use by utilizing measures such as:
- (i) Requiring water-conserving design and equipment in new construction;
 - (ii) Encouraging water-conserving landscaping and irrigation methods; and
 - (iii) Encouraging the retrofitting of existing development with water conserving devices.

1.10.7. Light and Glare

Policies

- Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.
- Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

Implementation Measure

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

Chapter 2. Circulation Element

2.1. Introduction

Goals

- Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.
- Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the County.

2.3.3. Highway Plan

Goal

- Goal 5: Maintain a minimum Level of Service (LOS) D.

Policies

- Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section lines. This is because the road center line can be determined by an existing survey.
- Policy 2: This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond 2010. Where the Kern County Planning and Natural Resources Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert regions for arterial right-of-way. The County shall routinely protect all midsection lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow construction on surveyed section and midsection lines, right-of-way width shall be the size

shown on the diagram map. No surveyed section and midsection “grid” will comprehensively apply to the Mountain Region.

Policy 3: This plan’s road-width standards are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.

- Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;
- Arterial [Major Highway] Minimum 110-foot right-of-way;
- Collector [Secondary Highway] Minimum 90-foot right-of-way;
- Commercial-Industrial Street Minimum 60-foot right-of-way; and
- Local Street [Select Local Road] Minimum 60-foot right-of-way.

Implementation Measure

Measure A: The Planning Department shall carry out the road network Policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. Planning Department can help developers and property owners in identifying where planned circulation is to occur.

2.3.4. Future Growth

Goal

Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

Policies

Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below Level of Service (LOS) D. Utilization of the CEQA process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.

Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along State routes are necessary then roads shall be built to Caltrans standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.

Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.

Policy 6: The County may accept a developer's road into the county's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.

Implementation Measure

Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

2.3.10. Congestion Management Programs

Goals

Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern COG's CMP.

Goal 2: To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.

Policies

Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated the Kern COG as the County's Congestion Management Agency (CMA).

Policy 2: The CMA is responsible for developing, adopting, and annually updating a CMP. The CMP is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also the Kern COG), regional transportation providers, local governments, Caltrans, and the air pollution control district.

Implementation Measures

Measure A: The Kern COG should request the proper consultation from County of Kern to develop and update the proper congestion management program.

Measure B: The elements within the Kern Congestion Management Program are to be implemented by each incorporated city and the County of Kern. Specifically, the land use analysis program, including the preparation and adoption of deficiency plans is required. Additionally, the adoption of trip reduction and travel demand strategies are required in the Congestion Management Program.

2.5.1. Trucks and Highways

The Kern County road network handles a high ratio of heavy truck traffic. State highways carry most of this traffic. Most of the trucks are interstate carriers. As such, interstate trucking is not under the direct control of County officials. In as much as this traffic affects County residents and taxpayers, they need actions to guarantee State highways in Kern County receive a fair share of California's transportation investment.

Goals

- Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.
- Goal 2: Reduce potential overweight trucks.
- Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.

Policies

- Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.
- Policy 2: Start a program that monitors truck traffic operations.
- Policy 3: Promote a monitoring program of truck lane pavement condition.

2.5.4. Transportation of Hazardous Materials**Goal**

- Goal 1: Reduce risk to public health from transportation of hazardous materials.

Policies

- Policy 1: The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.
- Policy 2: Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.

Implementation Measure

- Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.

Chapter 3. Noise Element**3.3. Sensitive Noise Areas****Goals**

- Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.
- Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policies

- Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.
- Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise
- Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.
- Policy 7: Employ the best available methods of noise control.

Implementation Measures

- Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.
- Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.
- Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn} .
- Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:
- Be the responsibility of the applicant.
 - Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
 - Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.
- Measure I: Noise analyses shall include recommended mitigation, if required, and shall:
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
 - Include estimated noise levels, in terms of CNEL, for existing and projected future (10–20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.
 - Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
 - Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

Chapter 4. Safety Element

4.1. Introduction

Goal

Goal 1: Minimize injuries and loss of life and reduce property damage.

4.2. General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint

Implementation Measures

Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.

4.3. Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

Policy

Policy 1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

Implementation Measures

Measure B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.

Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.

4.5. Landslides, Subsidence, Seiche, and Liquefaction

Policy

Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

4.6. Wildland and Urban Fire

Policies

- Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.
- Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.
- Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.
- Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measure

- Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

4.9. Hazardous Materials

Implementation Measure

- Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Chapter 5. Energy Element

5.2. Importance of Energy to Kern County

Policies

- Policy 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.
- Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

5.4.5. Solar Energy Development

Goal

- Goal 1: Encourage safe and orderly commercial solar development.

Policies

- Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.
- Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.
- Policy 4: The County should encourage solar development in the desert and valley regions previously disturbed, and discourage development of energy projects in undisturbed land supporting State or federally protected plant and wildlife species.

5.4.7. Transmission Lines***Goal***

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

Policy

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

Mojave Specific Plan

The Mojave Specific Plan was drafted in 2003 for the unincorporated eastern Kern County community of Mojave. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The Plan works in tandem with the Kern County General Plan and Zoning Ordinance to direct land use and development decisions, establishing a single set of community-wide policies and implementation strategies. The Plan is intended to take the place of previous Specific Plans which are rescinded upon adoption of this Specific Plan. The Plan includes the following elements: Land Use, Conservation, Open Space, Circulation, Housing and Community Development, Noise, and Seismic and Safety. The goal, policies, and implementation measures of the plan that are relevant to the proposed project are included below.

Chapter 3. Land Use Element***Objectives***

- Objective 3.2: Develop a balanced land use pattern to ensure that future growth provides a range of residential, employment, service, and recreational opportunities.
- Objective 3.6: Ensure that public services and utilities are provided commensurate with established needs and projected growth.

Policies

- Policy 3.6.2: Coordinate with the Mojave Public Utility District, County Sheriff's Department, County Library Department and County Fire Department to ensure sufficient services are provided to community residents and businesses.
- Policy 3.6.3: New development shall provide adequate flood control to protect properties within the 100-year floodplain.
- Policy 3.6.4: Work with service providers to facilitate and encourage modifications and improvements to existing water, sewer, drainage, electric, natural gas, and other utility systems.

Chapter 4. Conservation Element***Goal***

- Goal 5: Designate and control mineral extraction areas.

Objectives

- Objective 4.2: Maintain groundwater quality to allow local resources to meet local needs.
- Objective 4.3: Encourage conservation of energy resources.
- Objective 4.4: Maintain and promote the retention of natural settings and use of native or adaptable vegetation.
- Objective 4.5: Conserve known areas of mineral resources by limiting encroachment of incompatible urban uses.
- Objective 4.6: Promote the improvement of air quality and the maintenance of State and federal air quality standards in the Mojave area.

Policies

- Policy 4.2.1: Support regional efforts by the South Lahontan Regional Water Quality Control Board to improve and protect water quality. Promote compliance with the measures contained in the California Water Code and other requirements.
- Policy 4.2.2: If required, new development projects shall implement Best Management Practices (BMPs) under the National Pollution Discharge Elimination System (NPDES) permit. These practices are designed to reduce pollution runoff during construction of new projects and rehabilitation projects. Investigate and implement methods as appropriate over time to address the control of pollutants in stormwater runoff from development sites, and to encourage the recycling of runoff for groundwater recharge and similar beneficial purposes.
- Policy 4.3.1: Promote energy conservation measures contained in Title 24 of the California Code of Regulations.
- Policy 4.4.3: For development projects that are located outside the identified urbanized nonsensitive area (Figure 4-2) for biological resources, a biological survey shall be conducted. Alternatively,

a project applicant may demonstrate urbanized, nonsensitive status through the identification of applicable studies.

Policy 4.4.4: Encourage the preservation of Joshua trees, Joshua tree woodlands, known wildflower displays or other biologically sensitive flora determined during biological surveys.

Policy 4.5.1: Require mining activities to comply with California Surface Mining and Reclamation Act (SMARA) requirements.

Policy 4.6.3: Encourage development designs that promote energy conservation and that minimize the direct and indirect emissions of air contaminants.

Chapter 6. Circulation Element

Goal

Goal 1 Provide for adequate circulation to support future growth.

Objective

Objective 6.1: Provide adequate transportation facilities to serve area residents and commercial and industrial businesses.

Policies

Policy 6.1.1: Provide and maintain a circulation system that supports the types and intensities of land use in Mojave.

Policy 6.1.4: With the exception of State highways, all roadways and rights-of-way shall be constructed to Kern County Development Standards. State highways shall be constructed to Caltrans standards.

Policy 6.1.6: Coordinate with developers for the improvement of local streets in conjunction with an approved phased development, subject to approval of the Roads Department in accordance with the Kern County Land Division Ordinance and Kern County Development Standards.

Policy 6.1.8: Maintain a minimum service level of “D” or better on Circulation Element roadways. Maintain a minimum service level of “C” or better on Caltrans roadways.

Policy 6.1.9: Require new development to contribute to the financing of roadway improvements, including, lighting, roadway, railroad crossings, and traffic signals required to meet the demand generated by the project.

Policy 6.1.13: Roadways for new development shall be developed in accordance with Kern County Development Standards.

Policy 6.1.14: Final driveway access locations and design shall be determined through acquisition of an encroachment permit from the Kern County Roads Department at the time development occurs.

Mitigation/Implementation Measures

Measure F-4: As a part of discretionary permit approval, plans should be reviewed for street improvements, including landscaping and lighting. Where necessary, require establishment of a County Service Area (CSA) to maintain lighting and landscaping adjacent to County roads.

Measure F-12a: New development projects will have conditions of approval applied requiring construction of roadway improvements, dedications, and/or payment of in-lieu fees to provide circulation system improvements consistent with the Specific Plan Circulation Element.

Measure F-12d: No development or building permit will be approved unless the County finds that adequate circulation system capacity exists or can be made to exist to accommodate the demands of the use/development proposed.

Measure F-12e: A traffic analysis shall be submitted with any submittal of a precise development plan, division application, or zone change that implements the plan, and/or conditional use permit. The traffic analysis shall provide a trip generation for all vehicular traffic, the necessary improvements to the existing circulation system and the project's pro-rata share of signalization, and improvements on Kern County and the State Department of Transportation network. The traffic analysis shall be reviewed and approved by the Kern County Roads Department and the State Department of Transportation. Recommendations, as approved by the Roads Department, shall become conditions of approval. This requirement may be waived by the Roads Department, in conjunction with the State Department of Transportation.

Measure F-12f: Amendments to the Plan shall require preparation of a traffic study, including site-specific and regional current traffic counts for review and approval by the Roads Department and the State Department of Transportation. Recommendations for regional improvements and development contribution to maintain adopted Levels of Service shall be included.

Chapter 8. Noise Element

Goals

Goal 1: Evaluate transportation-related noise.

Goal 2: Evaluate noise during land use planning efforts.

Objectives

Objective 8.1: Minimize the effects of transportation-related noise.

Objective 8.2: Minimize the effects of noise through proper land use planning.

Policies

Policy 8.1.1: Reduce transportation-related noise impacts on sensitive land uses (as defined in the Kern County Noise Element) through the use of noise control measures.

Policy 8.1.2: Incorporate sound-reduction designs in development projects impacted by transportation-related noise.

Policy 8.1.3: Identify potential impacts from transportation noise during the planning stages of the development process. Mitigation measures (such as buffering, clustering or sound walls) shall be used as needed to meet County Noise Element and/or Airport Land Use Compatibility Plan standards.

- Policy 8.2.3: Ensure consistency of development proposals with the Kern County Airport Land Use Compatibility Plan and Mojave Specific Plan to reduce potential for noise conflicts.
- Policy 8.2.4: Identify noise-impact areas exposed to existing or projected noise levels exceeding 65 dB CNEL (exterior) or the performance standards described in this element.
- Policy 8.2.6: Industrial uses adjacent to residences shall minimize potential noise and health hazards. Buffers may be required and shall be reviewed during the Precise Development review process and may be imposed when necessary to maintain noise standards. Landscaping, picnic areas, parking, offices, warehousing, or other more compatible uses may be incorporated within identified buffer zones.
- Policy 8.2.7: Noise attenuation measures as defined by the Kern County Noise Element, Development Standards, and any pertinent noise studies (such as setbacks, clustering, berming, and sound walls) shall serve as a guide for future planning and development decisions.
- Policy 8.2.9: Amendments to the plan proposing sensitive uses adjacent to noise contours above 65 CNEL (see Figure 8-2 and 8-1) shall require preparation of a site-specific noise study including proposed mitigation.

Implementation Measures

- Measure G-2: Noise Attenuation Measures Noise attenuation measures (such as setbacks, clustering, berming, and sound walls) shall be required as conditions of project approval prior to or as part of construction in areas subject to excessive noise. Examples of cases that may require such attenuation measures include:
- a) Commercial and residential development where noise levels exceed adopted standards in the Kern County Noise Element.
 - b) Residential and other sensitive uses with direct exposure to highway activities and/or railroad noise.
 - c) Between residential land uses and commercial or industrial land uses.
- Measure G-3: Airport-Related Noise and Safety Implement the following measures to reduce the impact of airport-related noise and safety issues on development in surrounding areas:
- a) All discretionary development proposals shall be reviewed for compatibility with the adopted Airport Land Use Compatibility Plan. Appropriate limitations and conditions shall be incorporated to address compatibility with the Mojave Airport and encroachment issues for the Edwards Air Force Base, Naval Air Weapons Station China Lake, and the Military Complex Airspace.
- Incompatible uses shall not be permitted unless appropriate findings regarding public health, safety, and military readiness can be made.
- Measure G-4: Vehicular Noise. Implement the following measures to reduce the impact of vehicle-related noise on development in adjacent areas:
- a) New construction shall include sound walls as recommended by required acoustic studies.

- b) New development shall be required to identify and mitigate for vehicular noise impacts as a condition of approval for construction of new noise-sensitive land uses.
- c) Request that other agencies construct noise barriers as part of future highway, roadway, and rail projects to mitigate significant impacts beyond County jurisdiction.
- d) Landscaping or other project design measures are required in all new public and private projects to address potentially significant aesthetics impacts associated with noise barriers.
- e) Regulate traffic flow and coordinate with the California Highway Patrol to enforce speed limits.
- f) Incorporate noise impact considerations, particularly the relationship of parking ingress/egress, loading, and refuse collection areas to surrounding residential and other noise-sensitive uses.

Chapter 9. Seismic and Safety Objectives and Policies

Objectives

- Objective 9.1: Minimize the potential damage to structures and loss of life that could result from earthquakes.
- Objective 9.2: Prevent loss of life, reduce personal injuries and property damage, and minimize economic loss resulting from flood hazards.
- Objective 9.3: Protect the community from human-caused hazards related to air and ground transportation, hazardous materials, and other human activities.

Policies

- Policy 9.1.1: Safety measures required by the Uniform Building Code and the Kern County Seismic Safety Element during construction of new buildings are hereby incorporated by reference.
- Policy 9.2.1: Require new construction within a special flood hazard area, as specified on Flood Insurance Rate Maps (FIRMs) (shown on the Physical Constraints Overlay Map in this Plan), to conform to the Kern County Floodplain Management Ordinance.
- Policy 9.2.3: Investigate and mitigate flood hazards, or locate development away from such hazards, to preserve life and protect property.
- Policy 9.3.2: Ensure that hazardous materials used in business and industry are properly handled, and that information on their handling and use is available to fire protection and other safety agencies in accordance with the Fire Code.
- Policy 9.4.2: Work with the Kern County Fire Department and the Kern County Sheriff's Department to ensure sufficient services can adequately protect and serve the community.
- Policy 9.4.3: Ensure that street widths and clearance areas are sufficient to accommodate fire protection and emergency vehicles during land division review and site plan review.
- Policy 9.4.5: Continue to enforce the Kern County Health, Fire and Building standards for new development and rehabilitation of existing structures.

Chapter 10. Implementation

Mitigation/Implementation Measures

- Measure C-6a: Require a biological survey to be conducted in nonurbanized sensitive areas (not developed, not previously developed, or not previously mitigated) with potentially significant biological resources.
- Measure H-4b: Prior to discretionary development of any individual project within the Specific Plan area, a complete records and literature search and/or a Phase 1 Assessment shall be conducted to identify the presence of any specific cultural resources and/or Native American sacred lands at the project site. Recommendations shall be incorporated into project approval.
- Measure L-1: Adequate Services: Require applicants to demonstrate the availability of fire, police, emergency response and solid waste disposal services during discretionary environmental review.
- Measure L-2: Fire and Police Protection Implement the following measures to ensure adequate fire and police protection in the Mojave community:
- a) Work with the Kern County Sheriff's Department and Kern County Fire Department to ensure the continuation of an adequate level of services for the Specific Plan Area.
 - b) If additional Fire Department or Sheriff station sites are required, identify sites and require dedication of land for such purposes or payment of proportional share of services as a condition of development.
 - c) Work with local organizations and the County Sheriff and Fire Department to continue administration of the Mojave Desert Community Response Plan.
- Measure N-2b: Air Quality studies will be required for industrial zone changes and conditional use permit projects which may emit affected pollutants, or toxic air contaminants. Prior to the approval of any industrial zone changes and/or conditional use permits, a level of impact determination shall be made, at which time the appropriate air quality analysis will be conducted.
- Measure N-3a: Review construction plans prior to the issuance of building permits to ensure that energy efficiency requirements of Title 24 of the California Administrative Code are met.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan was certified in 1992 for the community of West Edwards Road Settlement in order to recognize existing development and prepare for projected community growth. The Plan includes the following elements: Land Use, Open Space, and Conservation; Circulation; Housing; and Safety as well as a Chapter on Provisions.

Each element establishes goals, policies, and implementation measures that guide planning decisions in the West Edwards Road Settlement Specific Plan area. Policies and implementation measures of the plan that are relevant to the proposed project are included below.

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

Goal

Goal 1.2.1: To provide adequate public services and facilities to meet current and projected community needs.

Policies

Policy 1.1.3.3: Development shall occur outside areas identified as primary floodways. All development projects will incorporate measures to ensure that the proposed project will not be hazardous, increase flood depths or velocities, or cause water quality to deteriorate. Developments which would be hazardous to the public health and safety will be prohibited.

Policy 1.2.3.1: New development shall be required to pay its proportional share of the costs of local infrastructure improvements such as public streets, and water and sewer systems.

Policy 1.2.3.2: Development shall be encouraged to utilize existing utility purveyors.

Implementation Measures

Measure 1.1.4.1: Site development shall be accomplished in compliance with Kern County Flood Damage Prevention Ordinance and Kern County Zoning Ordinance. Development prohibitions shall be the same in those ordinances.

Measure 1.1.4.3: Drainage improvement plans shall be approved for projects pursuant to the Kern County Zoning Ordinance.

Measure 1.2.4.3: Plans for adequate fire flows and access shall be approved by the Kern County Fire Department prior to issuance of a building permit.

Chapter 2. Circulation Element

Goal

Goal 2.1.13: To promote adequate road improvement standards for all new developments.

Policy

Policy 2.1.3.1: When development occurs, street rights-of-way shall be improved and dedicated to the County in accordance with all applicable County standards and ordinances.

Implementation Measures

Measure 2.1.4.1: Streets shall be improved to Type A Subdivision Standards as a requirement for a conditional use permit, final map subdivision, or parcel map.

Measure 2.1.4.2: The developer shall be responsible for the construction of street improvements in accordance with the Kern County Land Division Ordinance.

Chapter 4. Safety Element

Policies

Policy 4.1.3.2: New development will be allowed only when it can meet standard levels of service from fire and water service delivery systems.

Policy 4.1.4.3: All new development shall provide for the containment of drainage water generated on site. Drainage plans must meet the approval of the Kern County Public Works Department.

Policy 4.1.4.4: Prior to the issuance of building or grading permits, all development plans will need approval of Kern County Department of Planning and Development Services/Floodplain Management Section.

Implementation Measure

Measure 4.1.4.2: All construction shall comply with the requirements of the Kern County Code of Building Regulations and the Uniform Fire Code (UFC) regarding water supply, fire flow, and construction standards.

Chapter 5. General Provisions

Provision 2: Any discretionary development project that substantially disturbs property not previously developed or is not substantially surrounded by development as determined by the Director of Kern County Department of Planning and Development Services shall submit a cultural survey, including archaeological, paleontologic, and historical resources; said survey shall be completed in accordance with any guidelines supplied by the Southern San Joaquin Valley Archaeological Information Center at California State University at Bakersfield. Any Submittal shall also include mitigation measures which satisfactorily address the requirements of said inventory and the Kern County Department of Planning and Development Services.

Kern County Zoning Ordinance

Title 19 of the Kern County Ordinance provides a description of permitted uses for the various zoning classifications within the County. The Zoning Ordinance consists of two primary parts: a Zoning Map that delineates the boundaries of zoning districts; and a Zoning Code that explains the purpose of the districts, specifies permitted and conditional uses, and establishes development and performance standards. The intent of the Zoning Code is to protect public health, safety, and the general welfare of residents and visitors in the County. Together with the Zoning Map, the Zoning Code identifies the particular uses permitted on each parcel of land in the County and sets forth regulations and standards for development to ensure that the policies, goals, and objectives of the General Plan are implemented. In addition to land use regulations, the Zoning Code contains development standards that can lessen a new structure's impacts on a location or area. These standards control the height, setbacks, parking, lot coverage, gross floor area, etc. for new structures. The Zoning Code also regulates which uses are permitted in each of the County's zoning districts to ensure compatibility between land uses.

Regional Transportation Plan

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

The intent of the SCS is to achieve the State's emissions reduction targets for automobiles and light trucks. The SCS will also provide opportunities for a stronger economy, healthier environment, and safer quality of life for community members in Kern County. The RTP/SCS seeks to: improve economic vitality; improve air quality; improve the health of communities; improve transportation and public safety; promote the conservation of natural resources and undeveloped land; increase access to community services; increase regional and local energy independence; and increase opportunities to help shape our community's future.

The 2018 RTP/SCS financial plan identifies how much money is available to support the region's transportation investments. The plan includes a core revenue forecast of existing local, State, and federal sources along with funding sources that are considered to be reasonably available over the time horizon of the RTP/SCS. These new sources include adjustments to State and federal gas tax rates based on historical trends and recommendations from two national commissions (National Surface Transportation Policy and Revenue Study Commission and National Surface Transportation Infrastructure Financing Commission), leveraging of local sales tax measures, local transportation impact fees, potential national freight program/freight fees, future State bonding programs, and mileage based user fees (Kern COG, 2018).

Kern County's Solid Waste Management Plan

The Solid Waste Management Plan is a comprehensive guide for all solid waste management activities in the County. The plan identifies the existing solid waste generation and disposal facilities in Kern County, estimates future solid waste disposal demand, and identifies programs to meet this future need.

Kern County and Incorporated Cities Hazardous Waste Management Plan

The Kern County and Incorporated Cities Hazardous Waste Management Plan focuses on the siting of hazardous waste disposal facilities, the transport of hazardous waste in the County, protection of water resources from hazardous waste contamination, and public education concerning the use and disposal of hazardous waste.

4.11.4 Impacts and Mitigation Measures

Methodology

The potential impacts associated with the project are evaluated on a qualitative basis through a comparison of the existing land use and the proposed land uses, in consideration of the applicable planning goals identified above. Compliance with the aforementioned policies is illustrated in consistency tables provided in the Project Impacts section below. The change in the land use on the project site is significant if the effect described under the thresholds of significance below occurs as a result of the project. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project could have a have a significant adverse effect on land use if the project would:

- a. Physically divide an established community; or
- b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Project Impacts

Impact 4.11-1: The project would physically divide an established community.

The components of the proposed project would be developed on primarily vacant, undeveloped desert land that has been historically grazed. Land uses surrounding the project are primarily open desert, permitted solar energy generating facilities, scattered residential uses, or military operations. The project site is directly south of the community of Mojave. However, the proposed project is sited in a manner that would not physically divide or restrict access to the community of Mojave, as development is limited in the project area due to the location of the Mojave Air and Spaceport, Edwards Airforce Base, and BNSF Rail Road tracks. Therefore, the project is not anticipated to physically divide or restrict access to the community of Mojave or any other community and impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.11-2: The project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

The Kern County General Plan, Mojave Specific Plan, West Edwards Road Settlement Specific Plan, and the Kern County Zoning Ordinance establish land use policies and regulations that are applicable to the project. The following discussion evaluates the project's conformity to these plans, policies and regulations. The proposed project would require approval of Zone Change Case No. 56, Map 196; No. 2, Map 212; and No. 59, Map 213; and would require approval of CUPs No. 45, Map 196; No. 5, Map 212; and No. 66, Map 196. The Project also includes SPA No. 30, Map 196 to the Circulation Element of the Mojave Specific Plan to eliminate the future road reservation of Purdy Avenue, from United Street to Fifth Street. These approvals would be granted from the Kern County Planning Commission and would allow the construction and operation of a 300 MW solar project with up to 3GWh of energy storage capacity.

Kern County General Plan, Mojave Specific Plan, and West Edwards Road Settlement Plan

Table 4.11-2, *Consistency Analysis with Kern County General Plan for Land Use*, presents an evaluation of the project's consistency with the Kern County General Plan. **Table 4.11-3**, *Consistency Analysis with the Mojave Specific Plan for Land Use*, presents an evaluation of the project's consistency with the Mojave Specific Plan. **Table 4.11-4**, *Consistency Analysis with the West Edwards Road Settlement Specific Plan for Land Use*, presents an evaluation of the project's consistency with the West Edwards Road Settlement Specific Plan. The tables list the goals and policies identified above in the regulatory setting and provides analysis on the project's general consistency with overarching policies. Additionally, the tables provide goals and policies of issue areas that are presented in more detail in other sections of the EIR. As evaluated in detail in Table 4.11-2, Table 4.11-3, and Table 4.11-4, the project is consistent with the goals and policies of the Kern County General Plan, Mojave Specific Plan, and the West Edwards Road Settlement Specific Plan.

Removal of Future Road Reservations

The project operator is requesting an amendment to the Circulation Element of the Mojave Specific Plan (SPA 30, Map 196) to remove a portion of the designated, but not constructed, arterial roadway of Purdy Avenue from United Street to Fifth Street as shown on Figure 3-11, *Mojave Specific Plan Amendment*. The north/south 5th Street road reservation traversing the project site from Purdy Avenue to Silver Queen Road was removed in 2012, as described in the *Mojave-Rosamond Recycling and Sanitary Landfill EIR*. As detailed in Chapter 3, *Project Description*, on Figure 3-3a, *Northern Site Plans*, 55-foot setbacks from the center of the road reservation to the facilities fence would be observed north/south along 5th Street to Purdy Avenue and East/West along Purdy Avenue from 5th Street to 10th Street. This would allow for the construction of the arterial road shown in the Mojave Specific Plan, Figure 6-1, *Mojave Specific Plan Circulation Map*, if the Kern County Public Works Department deems necessary and would not prohibit the circulation of traffic around the project site.

Implementation of the Mojave Specific Plan Circulation Element goals, policies, and implementation measures would ensure consistency between the project and land use plan for the project area. Furthermore, the proposed amendment would be consistent with the surrounding land uses in the project vicinity. Therefore, the project's proposed amendment to the Circulation Element of the Mojave Specific Plan would not result in conflict with the applicable land use plan, and impacts would be less than significant.

Kern County Zoning Ordinance

As described above, the project is subject to the provisions of the Kern County Zoning Ordinance and a portion of the southern project site is included within Kern County Agricultural Preserve Number 24 boundary. As shown in Table 4.11-1, above, and in Chapter 3, *Project Description*, Figure 3-8, *Existing Zoning*, the Kern County Zoning Ordinance designates portions of the project site as being within the A (Exclusive Agriculture), A-1 (Limited Agriculture), A-1 H (A-1, Airport Approach Height Combining), and A-1 FPS (A-1, Floodplain Secondary Combining) Zone Districts.

The project proponent is requesting Zone Change Cases within the aforementioned in Zone Maps 196, 212, and 213. The Zone Change Cases, if approved, would change parcels from A-1 to A, A-1 H to A H, and A-1 FPS to A FPS. In addition, the project would require the approval of a CUP for each Zone Map in the project area per Sections 19.12.030 G and 19.14.030 G of the Kern County Zoning Ordinance. With the Zone Change and CUP approvals, the project would be consistent with the Exclusive Agriculture zoning classification, which allows solar facilities as a permitted use with a CUP.

Because the project's zoning classifications are consistent with current Kern County Zoning Ordinance land use designations which allow solar development with a CUP, the proposed project would be consistent with the its zoning classification with this discretionary approval. As such, with approval of the CUPs, the proposed project would be consistent with applicable land use policies and regulations, and impacts related to consistency with the zoning ordinance would be less than significant.

Kern County Airport Land Use Compatibility Plan

The northern portion of the project site is located within the Airport Influence Area of the Mojave Air and Space Port, within ALUCP Compatibility Zones B1, B2, and C. Additionally, the southernmost portion of the project site directly abuts the northern boundary of the Edwards Air Force Base. The project would be required to comply with the County's ALUCP and applicable Federal Aviation Administration (FAA) regulations regarding project approval to ensure that there would be no conflict with airport operations and no safety hazards are presented. As discussed in Section 4.9, *Hazards and Hazardous Materials*, implementation of Mitigation Measure MM 4.9-3 would ensure the proposed project would be consistent with the ALUCP and General Plan policies of Kern County by requiring the developer to coordinate with the Department of Defense (DoD) and obtain approval from FAA and the public airports and military installations in the area. With implementation of this mitigation measure, impacts would be less than significant. For a more detailed discussion of consistency with the ALUCP, see Section 4.9, *Hazards and Hazardous Materials*, Impact 4.9-5.

West Mojave Plan Habitat Conservation Plan

The proposed project would not be built in a site or manner that interferes with the preservation, restoration or enhancement of natural communities or ecosystems. Therefore, the proposed project would not conflict with the WMHCP and the project's impacts are considered less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.9-3 would be required (see Section 4.9, *Hazards and Hazardous Materials*, for text of Mitigation Measure MM 4.9-3).

Level of Significance after Mitigation

With Implementation of Mitigation Measure MM 4.9-3, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope of analysis for this chapter is the Western Antelope Valley. This scope was selected to analyze the cumulative impact to regional land use patterns of project development in the area, and because there is some uniformity to existing land use patterns in these regions. As described in more detail in Table 3-4 in Chapter 3, *Project Description*, of this EIR, 73 projects are proposed within the geographic scope, including 40 solar projects and 33 non-solar projects. While the surrounding area is still relatively rural in nature, the project, along with other proposed projects, has the potential to contribute to a cumulative influence on proposed land uses in and around the project site.

The anticipated impacts of the project in conjunction with cumulative development in the area of the project would increase the urbanization and result in the loss of open space. As discussed above, the project would generally be located in an undeveloped and unincorporated area of Kern County with little residential development, and would not divide an established community. Related projects in Kern County would be developed in similarly low-populated and relatively undeveloped areas. However, potential land use impacts require evaluation on a case-by-case basis because of the interactive effects of a specific development and its immediate environment. As described in Table 4.11-2, Table 4.11-3, and Table 4.11-4, below, the proposed project would be consistent with the goals and policies of the Kern County General Plan, Mojave Specific Plan, and the West Edwards Road Settlement Specific Plan, respectively. In addition, with approval of the CUPs, development of solar facilities for the proposed project would be an allowable use that would not conflict with the land use or zoning classification for the project site. Therefore, as proposed the project would be consistent with the goals and policies of the Kern County General Plan and the Kern County Zoning Ordinance and would therefore not contribute to a cumulatively considerable impact regarding land use.

Furthermore, all related projects would be required to separately undergo environmental review on a case-by-case basis in accordance with the requirements of CEQA. Each related project would also be required to demonstrate consistency with all applicable planning documents governing the project site, including the Kern County General Plan, the Kern County Zoning Ordinance, Mojave and West Edwards Road Settlement Specific Plans, and the Kern County ALUCP. Should potential impacts be identified, appropriate mitigation would be prescribed that would likely reduce potential impacts to less-than-significant levels. While the potential is low for the related projects to be within the Kern County ALUCP and potentially combine with the proposed project to result in impacts, implementation of Mitigation Measure MM 4.9-3 would ensure that the project's contribution to potential impacts in an airport land use plan influence area is less than significant. Additionally, should any related projects be within the Kern County ALCUP or an airport land use plan influence area, each would be required to comply with the policies and regulations of the Kern County ALUCP and FAA requirements, similar to the proposed project. Compliance with such regulations would ensure that cumulative impacts are less than significant.

With regard to cumulative effects of utility-sized solar power generation facilities, there is a potential that outside factors, such as the development of newer technology, change in State or national policy that encourages the construction of such facilities, or other economic factors, could result in the abandonment of such facilities. Unlike other facilities that, once constructed, can be retrofitted and utilized for another

specific use, solar power generation facilities have little opportunity for other uses should the project not be in operation. The potential for the cumulative effects caused by the abandonment of multiple solar facilities in Kern County could result in impacts on surrounding land uses should it be determined that these facilities are no longer viable commercial operations. Therefore, Mitigation Measure MM 4.11-1, which would require the implementation of a decommissioning plan to be carried out by the project proponent once the life of the project has ended, has been included to establish safeguards to ensure the maintenance of the health, safety, and welfare of the citizens of the County. Mitigation Measure MM 4.11-2 is also being included to ensure that the proposed solar facility does not interfere with the telemetry operations associated with the nearby military installations. While it is the intent of Kern County to promote the use of an alternative to fossil-fuel-generated electrical power in areas of the County that are identified to have suitable characteristics for production of commercial quantities of solar PV-generated electrical power, it is necessary to protect surrounding landowners from potential impacts associated with the abandonment of such facilities. With the implementation of Mitigation Measures MM 4.9-3, MM 4.11-1 and MM 4.11-2, cumulative land use impacts would be considered less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.9-3 would be required (see Section 4.9, *Hazards and Hazardous Materials*, for text of Mitigation Measure MM 4.9-3).

MM 4.11-1: Prior to issuance of any building permit, the project operator shall provide for review and approval by the Kern County Engineering, Surveying, and Permit Services Department or a County-contracted consulting firm at a cost to be borne by the project operator. The Decommission Plan shall factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from removal of support structures, and control of fugitive dust on the remaining undeveloped land. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations. The assumption, when preparing the estimate, is that the project operator is incapable of performing the work or has abandoned the solar facility, thereby requiring Kern County to hire an independent contractor to perform the decommissioning work. In addition to submitting a Decommission Plan, the project operator shall post or establish and maintain financial assurances with Kern County related to the deconstruction of the site as identified on the approved Decommission Plan in the event that at any point in time the project operator determines it is not in the company's best interest to operate the facility.

The financial assurance required prior to issuance of any building permit shall be established using one of the following:

- a. An irrevocable letter of credit;
- b. A surety bond;
- c. A trust fund in accordance with the approved financial assurances to guarantee the deconstruction work will be completed in accordance with the approved decommission plan; or
- d. Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department.

The financial institution or Surety Company shall give the County at least 120 days notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed annually by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate those adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommission Plan. Should the project operator deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance.

Once deconstruction has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommission of the site by the County shall be returned to the project operator.

Should any portion of the solar field not be in operational condition for a consecutive period of twelve 12 months that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project operator, by the County. Within this sixty (60) day period, the property owner, solar field owner, or project operator may provide the director of the Kern County Planning and Natural Resources Department a written request and justification for an extension for an additional twelve (12) months. The Kern County Planning and Natural Resources Director shall consider any such request at a Director's Hearing as provided for in Section 19.102.070 of the Kern County Zoning Ordinance. In no case shall a solar field that has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date, the solar facility was first deemed abandoned.

MM 4.11-2: Prior to the operation of the solar facility, the operator shall consult with the Department of Defense to identify the appropriate Frequency Management Office officials to coordinate the use of telemetry to avoid potential frequency conflicts with military operations.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-3, MM 4.11-1 and MM 4.11-2, cumulative impacts would be less than significant.

Project Consistency with the Kern County General Plan, Mojave Specific Plan, and West Edwards Road Settlement Specific Plan

Below, **Table 4.11-2**, *Consistency Analysis with Kern County General Plan Policies for Land Use*, provides summarizes the consistency of the project with all applicable goals and policies of the Kern County General Plan; **Table 4.11-3**, *Consistency Analysis with the Mojave Specific Plan for Land Use*, presents an evaluation of the project's consistency with the Mojave Specific Plan; and **Table 4.11-4**, *Consistency Analysis with the West Edwards Road Settlement Specific Plan for Land Use*, presents an evaluation of the project's consistency with the West Edwards Road Settlement Specific Plan applicable to the project site.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
KERN COUNTY GENERAL PLAN CHAPTER 1, LAND USE, OPEN SPACE AND CONSERVATION ELEMENT		
1.3 Physical and Environmental Constraints		
<p>Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.</p>	<p>Consistent with implementation of Mitigation Measure MM 4.10-1.</p>	<p>Consistent with this policy, the project would develop a solar PV power generation and storage facility that is not located on a hazardous site. See Section 4.9, <i>Hazards and Hazardous Materials</i>, of this EIR. As described in Section 4.7, <i>Geology and Soils</i>, of this EIR, the project site is not transected by a known active or potentially active fault and is not located within a State of California Alquist-Priolo Earthquake Fault Zone. In addition, construction of the proposed project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Adherence to all applicable regulations would mitigate any potential impacts associated with fault rupture adjacent to the project site. Based on the absence of any known active faults that cross, or are located in close proximity to, the project site and project compliance with applicable ordinances of the Kern County Building Code, the potential impact of fault rupture would be less than significant. Additionally, the proposed project would implement the recommendations of the final design level geotechnical report. The final report's recommendations would be consistent with the Kern County Building Code (Chapter 17.08) and the most recent version of the California Building Code. As described in Section 4.10, <i>Hydrology and Water Quality</i>, of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Implementation of Mitigation Measure MM 4.10-1 would require preparation of a drainage plan that would design project facilities to have one-foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures and grading for the project would be designed so that water surface elevations during flood events would not be increased by more than one foot. Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance. Thus, final review of the proposed</p>

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
<p>Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 (Seismic Hazard), Map Code 2.2 (Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard)) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.</p>	Consistent	<p>project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards. As such, with implementation of mitigation measures the project would be consistent with this goal.</p> <p>See 1.3, <i>Physical and Environmental Constraints</i>, Goal 1, of the Kern County General Plan, above.</p>
<p>Policy 3: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.</p>	Consistent	<p>Hazards and hazardous materials impacts are evaluated in Section 4.9, <i>Hazards and Hazardous Materials</i>, of this EIR. Consistent with this policy, the proposed project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.</p>
<p>Policy 8: Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.</p>	Consistent with implementation of Mitigation Measure MM 4.10-1.	<p>See Section 4.10, <i>Hydrology and Water Quality</i>, of this EIR. As described therein, project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the proposed project would be consistent with this policy.</p>

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. As described therein, project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the proposed project would be consistent with this policy.
Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan. ⁷	Consistent with implementation of Mitigation Measure MM 4.10-1.	See Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. As described therein, the project would not increase the potential for flooding beyond existing conditions. Flooding in this location would not result in a safety hazard, as the project would not establish a substantial permanent population onsite. Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the proposed project would be consistent with this policy.
Policy 11: Protect and maintain watershed integrity within Kern County.	Consistent with implementation of Mitigation Measures MM 4.9-2 and MM 4.10-1.	As discussed in Section 4.10, <i>Hydrology and Water Quality</i> , the project site would implement best management practices during construction to avoid impacts to water quality. The project would also implement Mitigation Measure MM 4.9-2 which would require the project proponent to provide a Hazardous Materials Business Plan, as described in Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR, to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.	Consistent with implementation of Mitigation Measure MM 4.7-3 and MM 4.10-1.	<p>The project would implement Mitigation Measures MM 4.7-3 and MM 4.10-1. As discussed in Section 4.7, <i>Geology and Soils</i>, grading would be subject to compliance with the Kern County National Pollutant Discharge Elimination System (NPDES) and the implementation of required BMPs would have the ability to minimize the potential for erosion or loss of topsoil. Since project construction would disturb well over an acre of ground, the project operator would conform to the requirements of NPDES General Construction Permit Program through the preparation of a Stormwater Pollution Prevention Plan (SWPPP), including erosion control and sediment control BMPs designed to prevent disturbed soils from moving offsite. Implementation of Mitigation Measure MM 4.7-3 would incorporate BMPs consistent with the Kern County NPDES General Construction Permit Program and would require the project proponent to prepare an Erosion and Sedimentation Control Plan as well as a SWPPP. Mitigation Measure MM 4.10-1 would require the preparation of a hydrologic drainage plan. The hydrologic drainage plan shall be prepared in accordance with the Kern County Grading Code and Kern County Development Standards. The proposed project would also be required to implement a drainage plan that would minimize the potential for changes in onsite drainage patterns that could increase erosion and sedimentation (See Section 4.10, <i>Hydrology and Water Quality</i>, of this EIR for more details). A grading permit would be obtained from the County prior to commencement of construction activities. According to Chapter 17.28 of the Kern County Grading Ordinance, this includes submittal of grading plans to the County for review prior to issuance of a grading permit and grading activities on the project site. County review of grading plans would ensure that appropriate erosion control measures have been implemented on site. Therefore, the proposed project would be consistent with this measure.</p>

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. The project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the proposed project would be consistent with this measure.
Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.	Consistent with implementation of Mitigation Measure MM 4.10-1.	As described in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the project would be developed in accordance with the General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the proposed project would be consistent with this measure.
Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Measure H, of the Kern County General Plan, above.
Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.	Consistent	Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR discusses impacts related to soil-disturbing activities and required compliance with Kern County's National Pollutant Discharge Elimination System Applicability legislation, which requires projects to comply with the State Water Resources Control Board's Construction General Permit.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
1.4 Public Facilities and Services		
Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.	Consistent with implementation of Mitigation Measure MM 4.14-2.	The proposed project would construct and operate a 300 megawatt (MW) solar facility with up to 3 gigawatt hours (GWh) of battery energy storage. The proposed project would consider two options for gen-tie routes, although only one route would be constructed. Both options involve the proposed project connecting to existing solar infrastructure. All infrastructure improvements associated with the proposed project would be fully funded by the project proponent. No further improvements are anticipated as a part of the project. However, should improvements be made, the project proponent would coordinate with the County to ensure that the cost of the infrastructure improvement is properly funded. Additionally, implementation of Mitigation Measure MM 4.14-2 would require the project to pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facilities in order to mitigate any potential impacts to fire or police protection services resulting from the proposed project.
Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.	Consistent with implementation of Mitigation Measure MM 4.17-1.	Public utility impacts are evaluated in Section 4.17, <i>Utilities and Service Systems</i> . As described therein, the project would have less-than-significant impacts on water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities. With the implementation of Mitigation Measure MM 4.17-1, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during construction and operation, resulting in less than significant impact to solid waste providers.
Policy 6: The County will ensure adequate fire protection to all Kern County residents.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.4, <i>Public Services and Facilities</i> , Goal 1, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 7: The County will ensure adequate police protection to all Kern County residents.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.4, <i>Public Services and Facilities</i> , Goal 1, above.
Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the CEQA documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.	Consistent with implementation of Mitigation Measure MM 4.17-1.	See 1.4, <i>Public Services and Facilities</i> , Policy 3, above.
Measure B: Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.	Consistent with implementation of Mitigation Measure MM 4.14-2	See 1.4, <i>Public Services and Facilities</i> , Goal 1, above.
Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.	Consistent	Project effects related to utilities are discussed in Section 4.17, <i>Utilities and Service Systems</i> , of this EIR. The project would result in less-than-significant impacts to utilities. Furthermore, the proposed project would include the development of a solar PV power generating facility that would produce approximately 300 MW of solar power and would store up to 3 GWh of energy, both of which would be delivered to the grid, reducing dependence on fossil fuel based energy.
Measure D: Involve utility providers in the land use and zoning review process.	Consistent	See 1.4, <i>Public Services and Facilities</i> , Policy 3, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.	Consistent with implementation of Mitigation Measure MM 4.14 and 4.14-2.	Impacts to fire protection services are evaluated in Section 4.14, <i>Public Services</i> , of this EIR. Mitigation Measure MM 4.14-1 requires implementation of a fire safety plan during project construction and operation that would include notification procedures and emergency fire precautions to help reduce fire risks and the consequential need for fire protection services onsite. Mitigation Measure MM 4.14-2 requires the project proponent to pay applicable fees and taxes to reduce significant impacts to fire or police protection services resulting from the project. Thus, it is not anticipated that new or physically altered Kern County Fire Department facilities would not be required to accommodate the proposed project.
1.9 Resources		
Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.	Consistent	The project site is located on land that is zoned as A (Exclusive Agriculture) and implementation of the proposed project would preclude livestock grazing on the site. Other uses besides agriculture, including solar energy generation and storage, are permitted within the A District with the approval of a CUP. The project would not involve additional change in the existing environment besides those described in this Draft EIR and would not directly lead to other projects that would result in the loss of grazing land. Direct disturbance related to the project would be approximately 2,006 acres. Additionally, discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, the project site is not located within the bounds of a mineral resource area. The project site is not located in areas of agricultural use or in areas containing petroleum, or mineral resources. Nor would the proposed project diminish these amenities in other parts of the County as a result of construction or operation proposed project. Therefore, the proposed project would be consistent with this goal.
Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential for future use.	Consistent	See 1.9, <i>Resource</i> , Goal 1, above. As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, the project site is not located within the bounds of a mineral resource area.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Goal 3: Ensure the development of resource areas minimize effects on neighboring resource lands.	Consistent	The solar facilities would be compatible with open space, agriculture, and other neighboring resource management land uses. Furthermore, the placement of solar arrays at the project site may deter other urban and suburban land uses from being developed nearby.
Goal 4: Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.	Consistent	The proposed project would develop a solar PV power generating facilities designed to produce approximately 300 MW of solar power and to store up to 3 GWh of battery energy storage. The location of the site would ensure a safe and orderly development of the solar facilities. Additionally, the NOP of this EIR was sent to state and federal agencies requesting their input to ensure that appropriate information about the project site were being gathered. Similarly, this EIR will also be circulated to these agencies, and staff will have the opportunity to comment on the environmental analyses. Therefore, the County is complying with this goal for the project.
Goal 5: Conserve prime agricultural lands from premature conversion	Consistent	As discussed in Section 4.2, <i>Agriculture and Forestry Resources</i> , of this EIR, the project site is not designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Consistent with this policy, Prime Farmlands would not be affected by the proposed project.
Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.	Consistent	Consistent with this policy, the proposed project would develop a solar PV power generating facilities designed to produce approximately 300 MW of solar power and to store up to 3 GWh of battery energy storage. The project would develop a clean energy source that would create fewer fossil fuel emissions; thus, protecting the environment.
Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.	Consistent	Impacts on natural resources are avoided or minimized through the design of the project and would not affect long term use of the site. The project implements the General Plan policy of maximizing utilization of available solar resources.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.	Consistent	See 1.9, <i>Resource</i> , Goal 5, of the Kern County General Plan, above.
Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.	Consistent with implementation of Mitigation Measure MM 4.10-1.	As discussed in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, the project would be required to adhere to the Kern County Development Standards and Kern County Code of Building Regulations which require site drainage plans that include development standards designed to protect water quality. Specifically, the project proponent would be required to prepare and submit a drainage plan to the Kern County Public Works Department, for approval of post-construction structural and nonstructural BMPs that could include Low Impact Development (LID) features such as drainage swales for collection of runoff prior to offsite discharge. Routine structural BMPs are intended to address water quality impacts related to drainage that are inherent in development. As discussed in Section 4.10, <i>Hydrology and Water Quality</i> , the proposed project could require the inclusion of a one or more retention basins to meet County drainage requirement. Consistent with this policy, the proposed project would require the submission of a drainage plan to the County for review and would implement Mitigation Measure MM 4.10-1, which requires a final hydrologic drainage plan designed to evaluate and minimize potential increases in runoff from the project site.
Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.	Consistent	See 1.9, <i>Resource</i> , Goal 5, of the Kern County General Plan, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 14: Emphasize conservation and development of identified mineral deposits.	Consistent	As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, the project site does not contain mineral resources including petroleum. Consistent with this policy, no development would occur that would impact identified mineral deposits.
Policy 17: Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.	Consistent	As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, the project site is not located on lands classified as MRZs by the CGS, nor is it zoned for or immediately adjacent to lands designated as Mineral and Petroleum areas by the Mojave Specific Plan or the Kern County General Plan. Neither the project site nor adjacent areas include land classified as a MRZ. As such, no lands classified as MRZ-2 would be encroached upon from incompatible land uses.
Measure F: Prime agricultural lands, according to the Kern County Interim-Important Farmland 2000 map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.	Consistent	As discussed in Section 4.2, <i>Agriculture and Forestry Resources</i> , of this EIR, the project site is not designated as Prime Farmland as identified by the California Department of Conservation. Consistent with this policy, no prime agricultural lands, which have Class I or II soils and a surface delivery water system, would be impacted by the proposed project.
Measure H: Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.	Consistent	As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, neither the project site nor surrounding areas contain State-designated mineral resource areas. Consistent with this measure, this EIR utilized the California Geological Survey's latest maps to identify local mineral deposits in the vicinity of the project site.
1.10 General Provisions		
Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.	Consistent	Consistent with this policy, the proposed project would develop a solar PV power generating facilities that are not located on a hazardous site. The project would develop a clean energy source that reduce fossil fuel emissions; thereby reducing GHG emissions, preserving natural resources, and promoting a safe and healthful environment.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
<i>1.10.1 Public Services and Facilities</i>		
Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.4, <i>Public Facilities and Services</i> , Goal 1, above. Impacts to public services are evaluated in Section 4.14, <i>Public Services</i> , of this EIR.
Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.	Consistent	See 1.4, <i>Public Facilities and Services</i> , Goal 1 and Policy 1, above.
Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.	Consistent	See 1.4, <i>Public Facilities and Services</i> , Policy 3, above.
Measure D: Involve utility providers in the land use and zoning review process.	Consistent	See 1.4, <i>Public Facilities and Services</i> , Policy 3, above.
Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.	Consistent	Water and wastewater impacts are evaluated in Section 4.10, <i>Hydrology and Water Quality</i> , and Section 4.17, <i>Utilities and Service Systems</i> , of this EIR. The proposed project would require a septic system to be built within the O&M facility in order to provide non-potable water for the estimated 6 full-time employees that would be at the facility during project operation. This septic system would treat sewage and would provide limited recharge to the nearby aquifer. This septic system would be constructed in accordance with Kern County Department of Public Health requirements. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed. Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would be consistent with this measure.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
1.10.2 Air Quality		
Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4.	Air quality and GHG impacts are evaluated in Sections 4.3, <i>Air Quality</i> , and 4.8, <i>Greenhouse Gas Emissions</i> , of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-4, which would reduce impacts to air quality to the extent feasible. Air quality mitigation measures include fugitive dust control measures and Valley Fever exposure minimization measures.
Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that: (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.	Consistent	See 1.10.2, <i>Air Quality</i> , Policy 18, above. This EIR serves to comply with this policy.
Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.	Consistent with implementation of Mitigation Measures MM 4.3-1 and 4.3-2	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. As discussed therein, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 would further reduce fugitive dust emissions during construction and operation, in compliance with the adopted rules and regulations of the Eastern Kern County Air Pollution Control District on ministerial permits.
Policy 21: The County shall support air districts efforts to reduce PM ₁₀ and PM _{2.5} emissions.	Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2.	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. As discussed in that section, implementation of Mitigation Measure MM 4.3-1 and MM 4.3-2 would further reduce PM ₁₀ and PM _{2.5} emissions during construction and operation.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, state, and local standards.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4.	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-4, which would reduce impacts to air quality to the extent feasible. The project would be in compliance with all applicable Eastern Kern County Air Pollution Control District, rules and regulations.
Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.	Consistent	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this measure, the necessary discretionary permits shall be referred to the Eastern Kern Air Pollution Control District for review and comment.
Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to: a. Minimizing idling time. b. Electrical overnight plug-ins.	Consistent with implementation of Mitigation Measures MM 4.3-1	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this measure, implementation of Mitigation Measure MM 4.3-1 would require diesel exhaust reduction strategies.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
<p>Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:</p> <ul style="list-style-type: none"> a. Pave dirt roads within the development. b. Pave outside storage areas. c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans. d. Use of alternative fuel fleet vehicles or hybrid vehicles. e. Use of emission control devices on diesel equipment. f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces. g. Provide bicycle lockers and shower facilities on site. h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86). i. The use and development of park and ride facilities in outlying areas. j. Other strategies that may be recommended by the local Air Pollution Control Districts. 	Consistent with implementation of Mitigation MM 4.3-1 through MM 4.3-4.	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this measure, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4 would further reduce adverse air quality effects.
<p>Measure J: The County should include PM₁₀ control measures as conditions of approval for subdivision maps, site plans, and grading permits.</p>	Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2.	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. As discussed in that section, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4 would further reduce PM ₁₀ and PM _{2.5} emissions during construction and operation.
1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation		
<p>Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.</p>	Consistent with implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5.	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. This EIR serves to comply with this policy and includes Mitigation Measures MM 4.5-1 through MM 4.5-5 to promote the preservation of cultural and historic resources where necessary.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.	Consistent Mitigation Measures MM 4.5-3.	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. Consistent with this measure, copies of reports will be provided to the Kern County Planning and Natural Resources Department and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield, per Mitigation Measure MM 4.5-3.
Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.	Consistent with implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5.	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. Consistent with this measure, impacts to archaeological and historical resources are evaluated in accordance with CEQA. This EIR serves to comply with this policy.
Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.	Consistent with implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7.	Paleontological resource impacts are evaluated in Section 4.7, <i>Geology and Soils</i> , of this EIR. Mitigation Measures MM 4.7-5 through MM 4.7-7 which would reduce potential impacts to known paleontological resources through hiring a qualified paleontologist shall be retained to monitor all ground-disturbing activity, document, and implement measures as needed.
Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.	Consistent.	Tribal Cultural resource impacts are evaluated in Section 4.16, <i>Tribal Cultural Resources</i> , of this EIR. Consistent with this measure, notification regarding the proposed project would be accomplished in accordance with the established procedures for discretionary projects and CEQA documents.
Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.	Consistent with implementation of Mitigation Measure MM 4.5-1.	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. This EIR serves to comply with this measure and includes Mitigation Measure MM 4.5-1, which would require consultation with the Native American monitor(s) to conduct a Cultural Resources Sensitivity Training for all personnel working on the proposed project.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
<i>1.10.5 Threatened and Endangered Species</i>		
Goal 1: Ensure that the County can accommodate anticipated future growth and development while a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.	Consistent with implementation of Mitigation Measure MM 4.10-1.	<p>As described in Section 4.10, <i>Hydrology and Water Quality</i>, of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the project would be developed in accordance with the General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1.</p> <p>As discussed in Section 4.14, <i>Public Services</i>, of this EIR, implementation of Mitigation Measure MM 4.14-2 would require the project to pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facilities in order to mitigate any potential impacts to fire or police protection services resulting from the proposed project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural Resources Department, any additional fire or police protection services, facilities or personnel required as a result of the proposed project would be appropriately funded. Therefore, the proposed project would be consistent with this measure.</p>
Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-14.	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. This EIR serves to comply with this policy and reduce potential impacts with mitigation. Additionally, the project would be developed and operated in accordance with all local, state and federal laws pertaining to the preservation of sensitive species.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 28: County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-14.	Biological Resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. This EIR serves to comply with this policy and reduce potential impacts with mitigation. As part of the biological resources evaluation and habitat assessment conducted for the project, relevant state and federal agencies were contacted to ensure that appropriate information about the project site were being gathered. Specifically, the NOP of this EIR was sent to state and federal agencies requesting their input on the biological resource evaluation. Similarly, this EIR will also be circulated to these agencies, and staff will have the opportunity to comment on the biological resources evaluation. Therefore, the County is complying with this policy for the project.
Policy 29: The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.	Consistent with implementation of Mitigation Measures MM 4.4-1 and MM 4.4-14.	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. The project site is located within the Mojave Specific Plan and the West Edwards Road Settlement Specific Plan areas. Consistency with the applicable policies of these plans are discussed below. Additionally, implementation of Mitigation Measures 4.4-1 and MM 4.4-14 would further increase cooperative efforts with local, State, and federal agencies to support threatened and endangered plant and wildlife.
Policy 31: Under the provisions of the California Environmental Quality Act, the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document is prepared.	Consistent	See 1.10.5, <i>Threatened and Endangered Species</i> , Policy 28, above.
Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.	Consistent with implementation of Mitigation Measure MM 4.4-14.	Biological resource impacts and impacts to riparian areas, are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. Consistent with this measure, Mitigation Measure MM 4.4-14 would require consultation with the California Department of Fish and Wildlife. The County will respond to all comments from reviewing agencies during the CEQA process.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.	Consistent	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. Consistent with this measure, the evaluation of impacts to biological resources was performed in accordance with CEQA.
Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.	Consistent with implementation of Mitigation Measure MM 4.4-1 through MM 4.4-14.	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. Consistent with this measure, the project would implement mitigation measures that require consultation with the California Department of Fish and Wildlife. The County has and will respond to all comments from reviewing agencies during the CEQA process.
1.10.6 Surface Water and Groundwater		
Policy 34: Ensure that water quality standards are met for existing users and future development.	Consistent with implementation of Mitigation Measures MM 4.9-2 and MM 4.10-1.	Water quality impacts are evaluated in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. Consistent with this policy, the proposed project would implement best management practices during construction to avoid impacts to water quality. The project would also implement a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.
Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.	Consistent	See 1.4, <i>Public Facilities and Services</i> , Goal 5, above.
Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.9, <i>Resources</i> , Policy 11, above.
Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.	Consistent with implementation of Mitigation Measures MM 4.10-1.	Section 4.10-1, <i>Hydrology and Water Quality</i> , of this EIR, discusses impacts and mitigation for potential impacts to the watershed during construction from pollutants, alteration of flow patterns, and changes in impervious surfaces. Consistent with this policy, construction-related impacts related to alteration of flow patterns and impervious surfaces would be less than significant.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure Y: Promote efficient water use by utilizing measures such as: (i) Requiring water-conserving design and equipment in new construction; (ii) Encouraging water-conserving landscaping and irrigation methods; and (iii) Encouraging the retrofitting of existing development with water conserving devices.	Consistent.	See 1.4, <i>Public Facilities and Services</i> , Goal 5, above.
1.10.7 Light and Glare		
Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.	Consistent with implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7.	Aesthetic impacts are evaluated in Section 4.1, <i>Aesthetics</i> , of this EIR. During construction, lighting would be limited during non-daylight hours and would be used in such a way that minimal illumination would be provided. Construction would temporarily and minimally increase glare conditions. Operational lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Lighting during construction and operation would be directed downwards and shielded to focus illumination and to minimize light trespass. Glare conditions would increase during operation with the addition of the solar modules across the project site and with the addition of the O&M building, energy storage facility, and optional collector substation. Mitigation Measure MM 4.1-5 would require compliance with the Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance) and would result in the minimum illumination needed to achieve safety and security objectives. Mitigation Measure MM 4.1-6 would require that solar panels and hardware are designed to minimize glare and spectral highlighting. Finally, Mitigation Measure MM 4.1-7 would require that all onsite buildings utilize non-reflect materials. With implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, impacts related to light and glare would be less than significant.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	Consistent with implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7.	See 1.10.7, <i>Light and Glare</i> , Policy 47, above
Measure AA: The County shall utilize CEQA Guidelines and the provisions of the Zoning Ordinance to minimize the impacts of light and glare on adjacent properties and in rural undeveloped areas.	Consistent with implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7.	See 1.10.7, <i>Light and Glare</i> , Policy 47, above
KERN COUNTY GENERAL PLAN CHAPTER 2, CIRCULATION ELEMENT		
2.1 Introduction		
Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.	Consistent	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, of the Kern County General Plan, above.
Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the County.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this goal, the proposed project would maintain a minimum LOS C or better for all roads throughout the County during operations and LOS D or better during short-term construction.
2.3.3 Highways Plan		
Goal 5: Maintain a minimum Level of Service (LOS) D.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this goal, the proposed project would maintain a minimum LOS C or better for all roads throughout the County during operations and LOS D or better during short-term construction.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section lines. This is because the road center line can be determined by an existing survey.	Consistent	Section 4.15, <i>Transportation</i> , of this EIR, provides a discussion of County circulation consistency. The project would include internal service roads. Consistent with this policy, all road improvements would be completed per Caltrans and/or County code and regulations. If access roads need to be built along lines other than those on the circulation diagram map, the project proponent in cooperation with the County, would negotiate necessary easements to allow this.
Policy 2: This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond 2010. Where the Kern County Planning and Natural Resources Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert regions for arterial right-of-way. The County shall routinely protect all midsection lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow construction on surveyed section and midsection lines, right-of-way width shall be the size shown on the diagram map. No surveyed section and midsection "grid" will comprehensively apply to the Mountain Region.	Consistent	See 2.3.3, <i>Highway Plan</i> , Policy 1, of the Kern County General Plan, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
<p>Policy 3: This plan's road-width standards are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.</p> <ul style="list-style-type: none"> • Expressway [Four Travel Lanes] Minimum 110-foot right-of-way; • Arterial [Major Highway] Minimum 110-foot right-of-way; • Collector [Secondary Highway] Minimum 90-foot right-of-way; • Commercial-Industrial Street Minimum 60-foot right-of-way; and • Local Street [Select Local Road] Minimum 60-foot right-of-way. 	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this measure, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to road standards and planning requirements.
<p>Measure A: The Planning Department shall carry out the road network Policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. Planning Department can help developers and property owners in identifying where planned circulation is to occur.</p>	Consistent	See 2.3.3, <i>Highway Plan</i> , Policy 3, of the Kern County General Plan, above.
2.3.4 Future Growth		
<p>Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.</p>	Consistent	See 2.3.3, <i>Highway Plan</i> , Policy 3, of the Kern County General Plan, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below Level of Service (LOS) D. Utilization of the CEQA process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.	Consistent with implementation of Mitigation Measure MM 4.15-1	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the proposed project would maintain a minimum LOS D for all roads throughout the County. Additionally, implementation of Mitigation Measure MM 4.15-1 would require the preparation of a Construction Traffic Control Plan to be reviewed and approved by Kern County and Caltrans, which would further reduce impacts to traffic and transportation.
Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along State routes are necessary then roads shall be built to Caltrans standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.	Consistent	See 2.3.3, <i>Highway Plan</i> , Policy 1, above.
Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.	Consistent	Consistent with this policy, the project proponent would fund improvements to driveways that provide access to any County, city, or State roads.
Policy 6: The County may accept a developer's road into the county's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.	Consistent	The proposed project would not develop a public road. However, consistent with this policy, the project proponent would be required to negotiate approval with the County where any proposed private access driveways would intersect public right-of-way.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the proposed project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.
2.3.10 Congestion Management Programs		
Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern COG's CMP.	Consistent with implementation of Mitigation Measure MM 4.15-1	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this goal, the proposed project would maintain a minimum LOS D for all roads throughout the County. Additionally, implementation of Mitigation Measure MM 4.15-1 would require the preparation of a Construction Traffic Control Plan to be reviewed and approved by Kern County and Caltrans, which would further reduce impacts to traffic and transportation.
Goal 2: To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the proposed project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards and would not conflict with the Kern COG CMP.
Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated the Kern COG as the County's Congestion Management Agency (CMA).	Consistent	See 2.3.10, <i>Congestion Management Program</i> , Goal 1 and 2, above.
Policy 2: The CMA is responsible for developing, adopting, and annually updating a CMP. The CMP is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also the Kern COG), regional transportation providers, local governments, Caltrans, and the air pollution control district.	Consistent	See 2.3.10, <i>Congestion Management Program</i> , Goal 2, above. Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the proposed project would not conflict with the Kern COG CMP.
Measure A: The Kern COG should request the proper consultation from County of Kern to develop and update the proper congestion management program.	Consistent	See 2.3.10, <i>Congestion Management Program</i> , Goal 1 and 2, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure B: The elements within the Kern Congestion Management Program are to be implemented by each incorporated city and the County of Kern. Specifically, the land use analysis program, including the preparation and adoption of deficiency plans is required. Additionally, the adoption of trip reduction and travel demand strategies are required in the Congestion Management Program.	Consistent	See 2.3.10, <i>Congestion Management Program</i> , Goal 1 and 2, above.
2.5.1 Trucks and Highways		
Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the proposed project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards, which would ensure the provision of heavy truck transportation resulting from project implementation in the safest way possible.
Goal 2: Reduce potential overweight trucks.	Consistent	See 2.5.1, <i>Trucks and Highways</i> , Goal 1, above.
Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.	Consistent	See 2.5.1, <i>Trucks and Highways</i> , Goal 1, above.
Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.	Consistent	As discussed in Section 4.15, <i>Transportation</i> , of this EIR, coordination and consultation with Caltrans is ongoing throughout the project's lifetime, consistent with this policy
Policy 2: Start a program that monitors truck traffic operations.	Consistent	Consistent with this policy, as stated in Section 4.15, <i>Transportation</i> , of this EIR, with implementation of Mitigation Measure MM 4.15-1, a Construction Traffic Control Plan will be submitted to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 9, as appropriate, for approval.
Policy 3: Promote a monitoring program of truck lane pavement condition.	Consistent	See 2.5.1, <i>Trucks and Highways</i> , Policy 2, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
2.5.4 Transportation of Hazardous Materials		
Goal 1: Reduce risk to public health from transportation of hazardous materials.	Consistent with implementation of Mitigation Measure MM 4.9-1.	Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR, provides a discussion of Hazardous Materials Transportation and existing regulatory requirements of the California Vehicle Code that pertain to transport of hazardous materials and wastes. Consistent with this policy, the project would not pose a significant risk to public health from transportation of hazardous materials with implementation of Mitigation Measure MM 4.9-1, which requires the preparation of a hazardous materials business plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to maintenance workers and/or the public.
Policy 1: The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.	Consistent with implementation of Mitigation Measure MM 4.9-1.	See 2.5.4, <i>Transportation of Hazardous Materials</i> , Goal 1, above.
Policy 2: Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.	Consistent with implementation of Mitigation Measure MM 4.9-1.	See 2.5.4, <i>Transportation of Hazardous Materials</i> , Goal 1, above.
Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.	Consistent with implementation of Mitigation Measure MM 4.9-1.	See 2.5.4, <i>Transportation of Hazardous Materials</i> , Goal 1, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
KERN COUNTY GENERAL PLAN CHAPTER 3, NOISE ELEMENT		
3.3 Sensitive Noise Areas		
Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.	Consistent.	Noise impacts, sensitive receptors and County noise thresholds are evaluated in Section 4.13, <i>Noise</i> , of this EIR. As discussed in that section, the proposed project would not cause significant impacts to sensitive receptors. Thus, the project would be consistent with this goal.
Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.	Consistent	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with existing land use designations of the project site.
Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.	Consistent.	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1, above.
Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.	Consistent.	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1, above. Consistent with this policy the project would be encouraged to provide vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.
Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.	Consistent	See 3.3, <i>Sensitive Noise Areas</i> , Goal 2, above. Noise-sensitive land uses are evaluated in Section 4.13, <i>Noise</i> , of this EIR.
Policy 7: Employ the best available methods of noise control.	Consistent	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1, above.
Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.	Consistent	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with existing land use and zoning designations of the project site.
Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.	Consistent	Consistent with this measure, the proposed project will be reviewed for conformance with the policies outlined in this element.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L _{dn} and interior noise levels in excess of 45 dB L _{dn} .	Consistent.	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1 and Measure A, of the Kern County General Plan.
Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall: <ul style="list-style-type: none"> a) Be the responsibility of the applicant. b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics. c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project. 	Consistent	Consistent with this measure, the proposed project will prepare an acoustical analysis in accordance with the requirements of Chapter 3, <i>Noise Element</i> , Measure G, of the Kern County General Plan.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
<p>Measure I: Noise analyses shall include recommended mitigation, if required, and shall:</p> <ul style="list-style-type: none"> a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions. b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10–20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element. c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element. d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided. 	Consistent.	Consistent with this measure, a noise assessment was conducted for the proposed project and is referenced in Section 4.13, <i>Noise</i> , of this EIR. In accordance with this measure, the noise assessment includes representative noise measurements, recommended best management practices, estimated noise levels, in terms of CNEL, and estimates of noise exposure.
<p>Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.</p>	Consistent.	Consistent with this measure, the recommendations and requirements imposed pursuant to the findings of the acoustical analysis would be included with project implementation.
KERN COUNTY GENERAL PLAN CHAPTER 4, SAFETY ELEMENT		
4.1 Introduction		
<p>Goal 1: Minimize injuries and loss of life and reduce property damage.</p>	Consistent	Consistent with this goal, the project would be required to comply with adopted safety regulations, such as the Fire Code, and related policies in the General Plan.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
4.2 General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint		
Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.	Consistent	Consistent with this measure, Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR, includes a discussion of the Kern County, Multi-Hazard Mitigation Plan, and utilizes the document as guidance for potential mitigation measures pursuant to CEQA.
4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure		
Policy 1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.	Consistent	Consistent with this policy, the proposed project would not include development for human occupancy, and would not be located near an active earthquake fault.
Measure B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.	Consistent	See 1.3, <i>Physical and Environmental Constraints</i> , Measure D, of the Kern County General Plan, above.
Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.	Consistent	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, of the Kern County General Plan, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
4.5 Landslides, Subsidence, Seiche, and Liquefaction		
Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	Consistent	As discussed in Section 4.7, <i>Geology and Soils</i> , of this EIR, conditions for landslides are also not present at the site which is characterized by relatively gradual inclines across the site. Grading would be subject to compliance with the NPDES General Construction Permit requirements and the implementation of required BMPs would have the ability to minimize the potential for erosion or loss of topsoil. Adherence to the requirements of the Kern County Building Code and the CBC would ensure that effects from seismic-related ground failure including liquefaction would be minimized. Shallow groundwater is not expected on the proposed project site. See Section 4.7, <i>Geology and Soils</i> , of this EIR.
4.6 Wildland and Urban Fire		
Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.	Consistent with implementation of Mitigation Measure MM 4.14-1 and Mitigation Measure MM 4.14-2.	Consistent with this policy, impacts on emergency services and facilities are discussed and evaluated in Section 4.14, <i>Public Services</i> , of this EIR.
Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.	Consistent with implementation of Mitigation Measure MM 4.14-1.	The project would not interfere or prohibit the County's ability to meet this policy. Mitigation Measure MM 4.14-1 requires the proponent to develop a fire safety plan for use during construction and operational activities. All onsite employees would be trained on fire safety and how to respond to onsite fires, should they occur. See Sections 4.9, <i>Hazards and Hazardous Materials</i> , and 4.14, <i>Public Services</i> , and 4.18, <i>Wildfire</i> , of this EIR.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.	Consistent with implementation of Mitigation Measure MM 4.15-1.	Section 4.15, <i>Transportation</i> , of this EIR includes Mitigation Measure MM 4.15-1 would require the approval of a Construction Traffic Control Plan, encroachments and or other necessary permits by Caltrans and/or the Kern County Roads Dept. The project proponent would develop and implement a fire safety plan for use during construction and operation.
Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.	Consistent with implementation of Mitigation Measure MM 4.14-1.	Consistent with this policy, the project would be required to comply with the adopted Fire Code and the requirements of the Kern County Fire Department.
Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.	Consistent with implementation of Mitigation Measure MM 4.14-1 and MM 4.14-2.	Consistent with this measure, the proposed project would implement Mitigation Measure MM 4.14-1, which would require preparation and implementation of a fire safety plan to ensure the provision of appropriate access. Additionally, the project would implement Mitigation Measure MM 4.14-2, which would require the project to compensate the county for any deficiencies in service resulting from project construction and operation.
4.9 Hazardous Materials		
Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.	Consistent with implementation of Mitigation Measure MM 4.14-1.	See 4.6, <i>Wildland and Urban Fire</i> , Policy 6, above.
KERN COUNTY GENERAL PLAN CHAPTER 5, ENERGY ELEMENT		
5.2 Importance of Energy to Kern County		
Policy 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.	Consistent	See 1.10.5, <i>Threatened and Endangered Species</i> , Policy 28, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.	Consistent	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1, above.
5.4.5 Solar Energy Development		
Goal 1: Encourage safe and orderly commercial solar development.	Consistent	Consistent with this goal, the proposed project would develop solar PV facilities that would generate 300 MW of solar energy and 3 GWh of battery energy storage and would offset an equivalent amount of fossil fuel-generated electrical power. The site is on vacant land and is located at a distance from established communities. The location of the site would ensure a safe and orderly development of the solar facilities.
Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.	+Consistent	Consistent with this policy, the proposed project would develop solar PV facilities capable of generating 300 MW of solar energy and 3 GWh of battery energy storage and would offset an equivalent amount of fossil fuel-generated electrical power in the desert region of Kern County. Operation of the proposed project would improve air quality within the County and assist the County in meeting attainment goals. See Section 4.3, <i>Air Quality</i> , of this EIR.
Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.	Consistent	Consistent with this policy, the project proposes the development of PV power generation and storage facilities in the desert region of Kern County. Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards.
Policy 4: The County should encourage solar development in the desert and valley regions previously disturbed, and discourage development of energy projects in undisturbed land supporting State or federally protected plant and wildlife species.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-14.	See 1.10.5, <i>Threatened and Endangered Species</i> , Policy 27, Policy 28, Policy 29, Policy 32, and Measure Q above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
<i>5.4.7 Transmission Lines</i>		
Goal 1: To encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects.	Consistent	Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations, would ensure that the proposed project's transmission lines would not pose significant environmental or public health and safety hazards.
Policy 5: The County should discourage the siting of above-ground transmission lines in visually sensitive areas.	Consistent	See 5.4.7, <i>Transmission Lines</i> , Goal 1, above. Further, visual impacts are evaluated in Section 4.1, <i>Aesthetics</i> , of this EIR.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Mojave Specific Plan Chapter 3, Land Use Element		
Objective 3.2: Develop a balanced land use pattern to ensure that future growth provides a range of residential, employment, service, and recreational opportunities.	Consistent	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with existing land use and zoning designations of the project site.
Objective 3.6: Ensure that public services and utilities are provided commensurate with established needs and projected growth.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.4, <i>Public Services and Facilities</i> , above. Public utility impacts are evaluated in Section 4.17, <i>Utilities and Service Systems</i> .
Policy 3.6.2: Coordinate with the Mojave Public Utility District, County Sheriff's Department, County Library Department and County Fire Department to ensure sufficient services are provided to community residents and businesses.	Consistent with implementation of Mitigation Measure MM 4.14-2.	As discussed in Section 4.14, <i>Public Services</i> , of this EIR, implementation of Mitigation Measure MM 4.14-2 would require the project to pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facilities in order to mitigate any potential impacts to fire or police protection services resulting from the proposed project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural Resources Department, any additional fire or police protection services, facilities or personnel required as a result of the proposed project would be appropriately funded. Public utility impacts are evaluated in Section 4.17, <i>Utilities and Service Systems</i> . As outlined in the NOP/IS, there would not be an additional demand to library services as a result of construction and operation of the proposed project. See 1.4, <i>Public Services and Facilities</i> , above.
Policy 3.6.3: New development shall provide adequate flood control to protect properties within the 100-year floodplain.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, Policy 9, Policy 10, Measure F, Measure H, and Measure J, and 1.9, <i>Resources</i> , Policy 11 above.
Policy 3.6.4: Work with service providers to facilitate and encourage modifications and improvements to existing water, sewer, drainage, electric, natural gas, and other utility systems.	Consistent	See Objective 3.6 above.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Mojave Specific Plan Chapter 4, Conservation Element		
Goal 5: Designate and control mineral extraction areas.	Consistent	See 1.9, <i>Resource</i> , Goal 1, above. As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, the project site is not located within the bounds of a mineral resource area.
Objective 4.2: Maintain groundwater quality to allow local resources to meet local needs.	Consistent with implementation of Mitigation Measure MM 4.9 -2 and MM 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Policy 11 and Measure N above.
Objective 4.3: Encourage conservation of energy resources.	Consistent	As discussed in Section 4.6, <i>Energy</i> , of this EIR, the project would be built in accordance with the current Title 24 standards at the time of construction. See 1.9, <i>Resource</i> , Goal 6, above. See 5.4.5, <i>Solar Energy Development</i> , Policy 1, above.
Objective 4.4: Maintain and promote the retention of natural settings and use of native or adaptable vegetation.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-15.	See 1.10.5, <i>Threatened and Endangered Species</i> , Policy 27, Policy 28, Policy 29, Policy 32, and Measure Q above.
Objective 4.5: Conserve known areas of mineral resources by limiting encroachment of incompatible urban uses.	Consistent	See 1.9, <i>Resource</i> , Goal 1, above. As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, the project site is not located within the bounds of a mineral resource area.
Objective 4.6: Promote the improvement of air quality and the maintenance of State and federal air quality standards in the Mojave area.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4.	See 1.10.2, <i>Air Quality</i> , Policy 18, Policy 19, Policy 20, Policy 21, Policy 22, Measure F, Measure G, Measure H, and Measure J, above.
Policy 4.2.1: Support regional efforts by the South Lahontan Regional Water Quality Control Board to improve and protect water quality. Promote compliance with the measures contained in the California Water Code and other requirements.	Consistent with implementation of Mitigation Measures MM 4.9-2 and MM 4.10-1.	See 1.10.6, <i>Surface Water and Groundwater</i> , Policy 34 and Policy 44, above. Section 4.10-1, <i>Hydrology and Water Quality</i> , of this EIR, discusses water quality.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 4.2.2: If required, new development projects shall implement Best Management Practices (BMPs) under the National Pollution Discharge Elimination System (NPDES) permit. These practices are designed to reduce pollution runoff during construction of new projects and rehabilitation projects. Investigate and implement methods as appropriate over time to address the control of pollutants in stormwater runoff from development sites, and to encourage the recycling of runoff for groundwater recharge and similar beneficial purposes.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Measure D, and 1.9, <i>Resources</i> , Policy 11, and 1.10.6, <i>Surface Water and Groundwater</i> , Policy 44 above.
Policy 4.3.1: Promote energy conservation measures contained in Title 24 of the California Code of Regulations.	Consistent	As discussed in Section 4.6, <i>Energy</i> , of this EIR, the project would be built in accordance with the current Title 24 standards at the time of construction.
Policy 4.4.3: For development projects that are located outside the identified urbanized nonsensitive area (Figure 4-2) for biological resources, a biological survey shall be conducted. Alternatively, a project applicant may demonstrate urbanized, nonsensitive status through the identification of applicable studies.	Consistent	As discussed in Section 4.4, <i>Biological Resources</i> , of this EIR, biological surveys were conducted at the project site.
Policy 4.4.4: Encourage the preservation of Joshua trees, Joshua tree woodlands, known wildflower displays or other biologically sensitive flora determined during biological surveys.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-15.	See 1.10.5, <i>Threatened and Endangered Species</i> , Policy 27, Policy 28, Policy 29, Policy 32, and Measure Q above.
Policy 4.5.1: Require mining activities to comply with California Surface Mining and Reclamation Act (SMARA) requirements.	Consistent	See 1.9, <i>Resource</i> , Goal 1, above. As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, the project site is not located within the bounds of a mineral resource area.
Policy 4.6.3: Encourage development designs that promote energy conservation and that minimize the direct and indirect emissions of air contaminants.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4.	As discussed in Section 4.6, <i>Energy</i> , of this EIR, the project would be built in accordance with the current Title 24 standards at the time of construction. See 1.9, <i>Resource</i> , Goal 6, above. See 5.4.5, <i>Solar Energy Development</i> , Policy 1, above. See 1.10.2, <i>Air Quality</i> , Policy 18, Policy 19, Policy 20, Policy 21, Policy 22, Measure F, Measure G, Measure H, and Measure J, above.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Mojave Specific Plan Chapter 6, Circulation Element		
Goal 1: Provide for adequate circulation to support future growth.	Consistent	Consistent with this goal, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to circulation.
Objective 6.1: Provide adequate transportation facilities to serve area residents and commercial and industrial businesses.	Consistent	Consistent with this objective, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to circulation.
Policy 6.1.1: Provide and maintain a circulation system that supports the types and intensities of land use in Mojave.	Consistent	Consistent with this policy, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to circulation.
Policy 6.1.4: With the exception of State highways, all roadways and rights-of-way shall be constructed to Kern County Development Standards. State highways shall be constructed to Caltrans standards.	Consistent	Consistent with this policy, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to roadways and rights-of-way.
Policy 6.1.6: Coordinate with developers for the improvement of local streets in conjunction with an approved phased development, subject to approval of the Roads Department in accordance with the Kern County Land Division Ordinance and Kern County Development Standards.	Consistent	Consistent with this policy, the Kern County Natural Resources and Planning Department would
Policy 6.1.8: Maintain a minimum service level of “D” or better on Circulation Element roadways. Maintain a minimum service level of “C” or better on Caltrans roadways.	Consistent	See 2.3.3, <i>Highways Plan</i> , Goal 5, above.
Policy 6.1.9: Require new development to contribute to the financing of roadway improvements, including, lighting, roadway, railroad crossings, and traffic signals required to meet the demand generated by the project.	Consistent	Consistent with this policy, the project would contribute to the financing of roadway improvements, including, lighting, roadway, railroad crossings, and traffic signals associated with increased demand generated by the project.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 6.1.13: Roadways for new development shall be developed in accordance with Kern County Development Standards.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Traffic and Transportation</i> , of this EIR. Consistent with this measure, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to road standards and planning requirements.
Policy 6.1.14: Final driveway access locations and design shall be determined through acquisition of an encroachment permit from the Kern County Roads Department at the time development occurs.	Consistent	Consistent with this policy, final driveway access locations and design shall be reviewed and approached by the Kern County Roads Department.
Measure F-4: As a part of discretionary permit approval, plans should be reviewed for street improvements, including landscaping and lighting. Where necessary, require establishment of a County Service Area (CSA) to maintain lighting and landscaping adjacent to County roads.	Consistent	Consistent with this measure, the County will review all plans associated with the project for the required street improvements.
Measure F-12a: New development projects will have conditions of approval applied requiring construction of roadway improvements, dedications, and/or payment of in-lieu fees to provide circulation system improvements consistent with the Specific Plan Circulation Element.	Consistent	Consistent with this measure, the project would construct all required roadway improvements and dedications, or pay in-lieu fees, to provide circulation system improvements.
Measure F-12d: No development or building permit will be approved unless the County finds that adequate circulation system capacity exists or can be made to exist to accommodate the demands of the use/development proposed.	Consistent	Consistent with this measure, the County would review all development and building permits associated with the project to determine whether or not adequate circulation system capacity exists or can be made to exist to accommodate the demands of the project.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure F-12e: A traffic analysis shall be submitted with any submittal of a precise development plan, division application, or zone change that implements the plan, and/or conditional use permit. The traffic analysis shall provide a trip generation for all vehicular traffic, the necessary improvements to the existing circulation system and the project's pro-rata share of signalization, and improvements on Kern County and the State Department of Transportation network. The traffic analysis shall be reviewed and approved by the Kern County Roads Department and the State Department of Transportation. Recommendations, as approved by the Roads Department, shall become conditions of approval. This requirement may be waived by the Roads Department, in conjunction with the State Department of Transportation.	Consistent	Consistent with this measure, and as discussed in Section 4.15, <i>Traffic and Transportation</i> , of this EIR, a traffic analysis has been prepared for this project.
Measure F-12f: Amendments to the Plan shall require preparation of a traffic study, including site-specific and regional current traffic counts for review and approval by the Roads Department and the State Department of Transportation. Recommendations for regional improvements and development contribution to maintain adopted Levels of Service shall be included.	Consistent	Consistent with this measure, and as discussed in Section 4.15, <i>Traffic and Transportation</i> , of this EIR, a traffic study has been prepared for this project.
Mojave Specific Plan Chapter 8, Noise Element		
Goal 1: Evaluate transportation-related noise.	Consistent with implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3.	Consistent with this goal, a noise assessment was conducted for the proposed project and is referenced in Section 4.13, <i>Noise</i> , of this EIR. In accordance with this goal, the noise assessment includes representative noise measurements, recommended best management practices, estimated noise levels, transportation noise, in terms of CNEL, and estimates of noise exposure.
Goal 2: Evaluate noise during land use planning efforts.	Consistent	Consistent with this goal, and as discussed in Section 4.13, <i>Noise</i> , of this EIR, a noise assessment was conducted and analysis has been prepared for this project.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Objective 8.1: Minimize the effects of transportation-related noise.	Consistent with implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3.	See Chapter 8, <i>Noise Element</i> , Goal 1, above.
Objective 8.2: Minimize the effects of noise through proper land use planning.	Consistent	See Chapter 8, <i>Noise Element</i> , Goal 2, above.
Policy 8.1.1: Reduce transportation-related noise impacts on sensitive land uses (as defined in the Kern County Noise Element) through the use of noise control measures.	Consistent with implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3.	Noise impacts, sensitive receptors and County noise thresholds are evaluated in Section 4.13, <i>Noise</i> , of this EIR. As discussed in that section, the proposed project would not cause significant impacts to sensitive receptors. Thus, the project would be consistent with this goal.
Policy 8.1.2: Incorporate sound-reduction designs in development projects impacted by transportation-related noise.	Consistent with implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3.	See Chapter 8, <i>Noise Element</i> , Goal 1, above.
Policy 8.1.3: Identify potential impacts from transportation noise during the planning stages of the development process. Mitigation measures (such as buffering, clustering or sound walls) shall be used as needed to meet County Noise Element and/or Airport Land Use Compatibility Plan standards.	Consistent with implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3.	See Chapter 8, <i>Noise Element</i> , Goal 1, above.
Policy 8.2.3: Ensure consistency of development proposals with the Kern County Airport Land Use Compatibility Plan and Mojave Specific Plan to reduce potential for noise conflicts.	Consistent	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with existing land use and zoning designations of the project site.
Policy 8.2.4: Identify noise-impact areas exposed to existing or projected noise levels exceeding 65 dB CNEL (exterior) or the performance standards described in this element.	Consistent	See Chapter 8, <i>Noise Element</i> , Goal 1 and Policy 8.1.3, above.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 8.2.6: Industrial uses adjacent to residences shall minimize potential noise and health hazards. Buffers may be required and shall be reviewed during the Precise Development review process and may be imposed when necessary to maintain noise standards. Landscaping, picnic areas, parking, offices, warehousing, or other more compatible uses may be incorporated within identified buffer zones.	Consistent	See Chapter 8, <i>Noise Element</i> , Goal 1 and Policy 8.1.3, above.
Policy 8.2.7: Noise attenuation measures as defined by the Kern County Noise Element, Development Standards, and any pertinent noise studies (such as setbacks, clustering, berming, and sound walls) shall serve as a guide for future planning and development decisions.	Consistent with implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3.	See Chapter 8, <i>Noise Element</i> , Goal 1 and Policy 8.1.3, above.
Policy 8.2.9: Amendments to the plan proposing sensitive uses adjacent to noise contours above 65 CNEL (see Figure 8-2 and 8-1) shall require preparation of a site-specific noise study including proposed mitigation.	Consistent	See Chapter 8, <i>Noise Element</i> , Goal 1, above.
Measure G-2: Noise Attenuation Measures Noise attenuation measures (such as setbacks, clustering, berming, and sound walls) shall be required as conditions of project approval prior to or as part of construction in areas subject to excessive noise. Examples of cases that may require such attenuation measures include: a) Commercial and residential development where noise levels exceed adopted standards in the Kern County Noise Element. b) Residential and other sensitive uses with direct exposure to highway activities and/or railroad noise. c) Between residential land uses and commercial or industrial land uses.	Consistent with implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3.	See Chapter 8, <i>Noise Element</i> , Goal 1 and Policy 8.1.1, above.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
<p>Measure G-3: Airport-Related Noise and Safety Implement the following measures to reduce the impact of airport-related noise and safety issues on development in surrounding areas:</p> <p>a) All discretionary development proposals shall be reviewed for compatibility with the adopted Airport Land Use Compatibility Plan. Appropriate limitations and conditions shall be incorporated to address compatibility with the Mojave Airport and encroachment issues for the Edwards Air Force Base, Naval Air Weapons Station China Lake, and the Military Complex Airspace.</p> <p>Incompatible uses shall not be permitted unless appropriate findings regarding public health, safety, and military readiness can be made.</p>	Consistent	See Chapter 8, <i>Noise Element</i> , Policy 8.2.3, above.
<p>Measure G-4: Vehicular Noise. Implement the following measures to reduce the impact of vehicle-related noise on development in adjacent areas:</p> <p>a) New construction shall include sound walls as recommended by required acoustic studies.</p> <p>b) New development shall be required to identify and mitigate for vehicular noise impacts as a condition of approval for construction of new noise-sensitive land uses.</p> <p>c) Request that other agencies construct noise barriers as part of future highway, roadway, and rail projects to mitigate significant impacts beyond County jurisdiction.</p> <p>d) Landscaping or other project design measures are required in all new public and private projects to address potentially significant aesthetics impacts associated with noise barriers.</p> <p>e) Regulate traffic flow and coordinate with the California Highway Patrol to enforce speed limits.</p> <p>f) Incorporate noise impact considerations, particularly the relationship of parking ingress/egress, loading, and refuse collection areas to surrounding residential and other noise-sensitive uses.</p>	Consistent with implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3.	See Chapter 8, <i>Noise Element</i> , Goal 1, above.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Mojave Specific Plan Chapter 9, Seismic and Safety Objectives and Policies		
Objective 9.1: Minimize the potential damage to structures and loss of life that could result from earthquakes.	Consistent	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, and 4.1, <i>Introduction</i> , Goal 1, and 4.3, <i>Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure</i> , Policy 1, Measure B, and Measure C, above.
Objective 9.2: Prevent loss of life, reduce personal injuries and property damage, and minimize economic loss resulting from flood hazards.	Consistent with implementation of Mitigation Measure 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, and 1.3, <i>Physical and Environmental Constraints</i> , Goal 1 and Policy 10, above.
Objective 9.3: Protect the community from human-caused hazards related to air and ground transportation, hazardous materials, and other human activities.	Consistent with implementation of Mitigation Measure MM 4.9-1.	Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR, provides a discussion of Hazardous Materials Transportation and existing regulatory requirements of the California Vehicle Code that pertain to transport of hazardous materials and wastes. Consistent with this policy, the project would not pose a significant risk to public health from transportation of hazardous materials with implementation of Mitigation Measure MM 4.9-1, which requires the preparation of a hazardous materials business plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to maintenance workers and/or the public.
Policy 9.1.1: Safety measures required by the Uniform Building Code and the Kern County Seismic Safety Element during construction of new buildings are hereby incorporated by reference.	Consistent	Consistent with this policy, the project would be required to comply with Safety measures required by the Uniform Building Code and the Kern County Seismic Safety Element.
Policy 9.2.1: Require new construction within a special flood hazard area, as specified on Flood Insurance Rate Maps (FIRMs) (shown on the Physical Constraints Overlay Map in this Plan), to conform to the Kern County Floodplain Management Ordinance.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, Policy 9, Policy 10, Measure F, Measure H, and Measure J.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 9.2.3: Investigate and mitigate flood hazards, or locate development away from such hazards, to preserve life and protect property.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, Policy 9, Policy 10, Measure F, Measure H, and Measure J, and 1.9, <i>Resources</i> , Policy 11 above.
Policy 9.3.2: Ensure that hazardous materials used in business and industry are properly handled, and that information on their handling and use is available to fire protection and other safety agencies in accordance with the Fire Code.	Consistent with implementation of Mitigation Measure MM 4.9-1.	See Chapter 9, <i>Seismic and Safety Objectives and Policies</i> , Objective 9.3, above. Additionally, consistent with this policy, the project would be required to comply with the adopted Fire Code and the requirements of the Kern County Fire Department, as needed in order to ensure safe handling of hazardous materials.
Policy 9.4.2: Work with the Kern County Fire Department and the Kern County Sheriff's Department to ensure sufficient services can adequately protect and serve the community.	Consistent with implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2.	See 1.3, <i>Physical Constraints</i> , Goal 1, 1.4, <i>Public Facilities and Services</i> , Goal 1 and Measure L, 4.6, <i>Wildland and Urban Fire</i> , Policy 6 and Measure A, and Chapter 3, <i>Land Use Element of the Mojave Specific Plan</i> , Objective 3.6, above.
Policy 9.4.3: Ensure that street widths and clearance areas are sufficient to accommodate fire protection and emergency vehicles during land division review and site plan review.	Consistent	Consistent with this policy, the project would be required to comply with the adopted Fire Code and the requirements of the Kern County Fire Department. In addition, construction of the proposed project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08).
Policy 9.4.5: Continue to enforce the Kern County Health, Fire and Building standards for new development and rehabilitation of existing structures.	Consistent	Consistent with this policy, the project would be required to comply with the adopted Kern County Health, fire, and Building standards.
Chapter 10, Implementation		
Measure C-6a: Require a biological survey to be conducted in nonurbanized sensitive areas (not developed, not previously developed, or not previously mitigated) with potentially significant biological resources.	Consistent	As discussed in Section 4.4, <i>Biological Resources</i> , of this EIR, biological surveys were conducted at the project site.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH THE MOJAVE SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure H-4b: Prior to discretionary development of any individual project within the Specific Plan area, a complete records and literature search and/or a Phase I Assessment shall be conducted to identify the presence of any specific cultural resources and/or Native American sacred lands at the project site. Recommendations shall be incorporated into project approval.	Consistent	As discussed in Section 4.5, <i>Cultural Resources</i> , of this EIR, a cultural resources technical report was prepared which details the results of a cultural resources records search, field survey, and resource evaluations for the project site.
Measure L-1: Adequate Services: Require applicants to demonstrate the availability of fire, police, emergency response and solid waste disposal services during discretionary environmental review.	Consistent	Public service impacts are evaluated in Section 4.14, <i>Public Services</i> , of this EIR. This EIR serves to comply with this policy.
Measure L-2: Fire and Police Protection Implement the following measures to ensure adequate fire and police protection in the Mojave community: a) Work with the Kern County Sheriff's Department and Kern County Fire Department to ensure the continuation of an adequate level of services for the Specific Plan Area. b) If additional Fire Department or Sheriff station sites are required, identify sites and require dedication of land for such purposes or payment of proportional share of services as a condition of development. c) Work with local organizations and the County Sheriff and Fire Department to continue administration of the Mojave Desert Community Response Plan.	Consistent with implementation of Mitigation Measures MM 4.14-2.	As discussed in Section 4.14, <i>Public Services</i> , of this EIR, implementation of Mitigation Measure MM 4.14-2 would require the project to pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facilities in order to mitigate any potential impacts to fire or police protection services resulting from the proposed project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural Resources Department, any additional fire or police protection services, facilities or personnel required as a result of the proposed project would be appropriately funded. Therefore, the proposed project would be consistent with this measure.
Measure N-2b: Air Quality studies will be required for industrial zone changes and conditional use permit projects which may emit affected pollutants, or toxic air contaminants. Prior to the approval of any industrial zone changes and/or conditional use permits, a level of impact determination shall be made, at which time the appropriate air quality analysis will be conducted.	Consistent	As discussed in Section 4.3, <i>Air Quality</i> , of this EIR, an air quality technical report was prepared which was prepared in accordance with the Eastern Kern Air Pollution Control District's Guidelines for Implementation of the California Environmental Quality Act and Kern County Planning Department's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports
Measure N-3a: Review construction plans prior to the issuance of building permits to ensure that energy efficiency requirements of Title 24 of the California Administrative Code are met.	Consistent	As discussed in Section 4.6, <i>Energy</i> , of this EIR, the project would be built in accordance with the current Title 24 standards at the time of construction.

TABLE 4.11-4: CONSISTENCY ANALYSIS WITH THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Chapter 1, Land Use, Open Space, and Conservation Element		
Goal 1.2.1: To provide adequate public services and facilities to meet current and projected community needs.	Consistent with implementation of Mitigation Measure MM 4.14-2.	Public service impacts are evaluated in Section 4.14, <i>Public Services</i> , of this EIR. Implementation of Mitigation Measure MM 4.14-2 would require the project to pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facilities in order to mitigate any potential impacts to fire or police protection services resulting from the proposed project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural Resources Department, any additional fire or police protection services, facilities or personnel required as a result of the proposed project would be appropriately funded.
Policy 1.1.3.3: Development shall occur outside areas identified as primary floodways. All development projects will incorporate measures to ensure that the proposed project will not be hazardous, increase flood depths or velocities, or cause water quality to deteriorate. Developments which would be hazardous to the public health and safety will be prohibited.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, <i>Physical Constraints</i> , Goal 1, above.
Policy 1.2.3.1: New development shall be required to pay its proportional share of the costs of local infrastructure improvements such as public streets, and water and sewer systems.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.3, <i>Physical Constraints</i> , Goal 1, and Policy 1, above.
Policy 1.2.3.2: Development shall be encouraged to utilize existing utility purveyors.	Consistent	As discussed in Section 4.17, <i>Utilities</i> , the project would utilize existing utility purveyors.
Measure 1.1.4.1: Site development shall be accomplished in compliance with Kern County Flood Damage Prevention Ordinance and Kern County Zoning Ordinance. Development prohibitions shall be the same in those ordinances.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, Policy 9, Policy 10, Measure F, Measure H, and Measure J.
Measure 1.1.4.3: Drainage improvement plans shall be approved for projects pursuant to the Kern County Zoning Ordinance.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, <i>Physical Constraints</i> , Goal 1, and Measure D, above.

TABLE 4.11-4: CONSISTENCY ANALYSIS WITH THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure 1.2.4.3: Plans for adequate fire flows and access shall be approved by the Kern County Fire Department prior to issuance of a building permit.	Consistent with implementation of Mitigation Measure MM 4.14-1 and MM 4.14-2.	Consistent with this measure, the proposed project would implement Mitigation Measure MM 4.14-1, which would require preparation and implementation of a fire safety plan to ensure the provision of appropriate access. Additionally, the project would implement Mitigation Measure MM 4.14-2, which would require the project to compensate the county for any deficiencies in service resulting from project construction and operation.
Chapter 2, Circulation Element		
Goal 2.1.13: To promote adequate road improvement standards for all new developments.	Consistent	Consistent with this measure, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to road standards and planning requirements.
Policy 2.1.3.1: When development occurs, street rights-of-way shall be improved and dedicated to the County in accordance with all applicable County standards and ordinances.	Consistent	Consistent with this measure, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to road standards and planning requirements.
Measure 2.1.4.1: Streets shall be improved to Type A Subdivision Standards as a requirement for a conditional use permit, final map subdivision, or parcel map.	Consistent	Consistent with this measure, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to road standards and planning requirements.
Measure 2.1.4.2: The developer shall be responsible for the construction of street improvements in accordance with the Kern County Land Division Ordinance.	Consistent	Consistent with this measure, the proposed project would be in compliance with the road network policies and would implement the Kern County Land Division Ordinance as they relate to road standards and planning requirements.
Chapter 4, Safety Element		
Policy 4.1.3.2: New development will be allowed only when it can meet standard levels of service from fire and water service delivery systems.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.4, <i>Public Services and Facilities</i> , above.

TABLE 4.11-4: CONSISTENCY ANALYSIS WITH THE WEST EDWARDS ROAD SETTLEMENT SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 4.1.4.3: All new development shall provide for the containment of drainage water generated on site. Drainage plans must meet the approval of the Kern County Public Works Department.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.9, <i>Resources</i> , Policy 11, above.
Policy 4.1.4.4: Prior to the issuance of building or grading permits, all development plans will need approval of Kern County Department of Planning and Development Services/Floodplain Management Section.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.9, <i>Resources</i> , Policy 11, above.
Measure 4.1.4.2: All construction shall comply with the requirements of the Kern County Code of Building Regulations and the Uniform Fire Code (UFC) regarding water supply, fire flow, and construction standards.	Consistent with implementation of Mitigation Measure MM 4.14-1.	See 4.6, <i>Wildland and Urban Fire</i> , Policy 6, above.
Chapter 5, General Provisions		
Provision 2: Any discretionary development project that substantially disturbs property not previously developed or is not substantially surrounded by development as determined by the Director of Kern County Department of Planning and Development Services shall submit a cultural survey, including archaeological, paleontologic, and historical resources; said survey shall be completed in accordance with any guidelines supplied by the Southern San Joaquin Valley Archaeological Information Center at California State University at Bakersfield. Any Submittal shall also include mitigation measures which satisfactorily address the requirements of said inventory and the Kern County Department of Planning and Development Services.	Consistent with implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5 and MM 4.7-5 through MM 4.7-7.	Cultural resource impacts are evaluated in Sections 4.5, <i>Cultural Resources</i> , and 4.6, <i>Geology and Soils</i> , of this EIR. Consistent with this measure, impacts to archaeological, historic, and paleontological resources are evaluated in accordance with CEQA. This EIR serves to comply with this provision.

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4.12.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for mineral resources. It also describes the impacts on mineral resources that would result from implementation of the proposed project, and mitigation measures that would reduce these impacts, if applicable. Information used in the preparation of this section includes: the California Department of Conservation California Geological Survey (CGS) and Kern County publications and maps as cited throughout this section.

4.12.2 Environmental Setting

Public policy is that the nonrenewable characteristic of mineral deposits necessitates the careful and efficient development of mineral resources in order to prevent the unnecessary waste of these deposits due to careless exploitation and uncontrolled urbanization. Management of these mineral resources will protect not only future development of mineral deposit areas but will also limit the exploitation of mineral deposits so that adverse impacts caused by mineral extraction will be reduced or eliminated. This section discusses the existing conditions related to mineral resources within the region and project area, including the project site.

Regional Setting

Mineral and petroleum resources are basic to Kern County's economy; Kern County produces more oil than any other county in the United States. Borax, cement and construction aggregates constitute major economic mineral resources. The Surface Mining and Reclamation Act of 1975 (SMARA) requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to its known or inferred mineral potential. The State Geologist has classified 2,971 square miles of land in Kern County as MRZs of varying significance. Mineral resources in Kern County include numerous mining operations that extract a variety of materials, including sand and gravel, stone, gold, dimensional stone, limestone, clay, shale, gypsum, pumice, decorative rock, silica, and specialty sand. Significant mineral resources located in southeastern Kern County include borates, limestone, gold, and dimension stone. The MRZ categories are defined as follows (CGS, 1999):

- **MRZ-1:** Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2a:** Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves. Land included in MRZ-2a is of prime importance because it contains known economic mineral deposits.
- **MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain inferred mineral resources as determined by their lateral extension from proven deposits or their similarity to proven deposits. Further exploration could result in upgrading areas classified MRZ-2b to MRZ-2a.

- **MRZ-3a:** Areas containing known mineral occurrences of undetermined economic significance. Further exploration could result in reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.
- **MRZ-3b:** Areas containing inferred mineral occurrences of undetermined economic significance. Further exploration could result in the reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.
- **MRZ-4:** Areas containing no known mineral occurrence.

Table 4.12-1, *Classified Mineral Resources within Kern County*, demonstrates the classified mineral resources within Kern County that are part of the MRZ-2 group and, therefore, have a demonstrated mineral significance (as opposed to the MRZ-3 group, which has an undetermined mineral significance).

TABLE 4.12-1: CLASSIFIED MINERAL RESOURCES WITHIN KERN COUNTY

Mineral Resource	MRZ Classification	Number of Areas	Total Acreage
Borates	MRZ-2a and 2b	2	2,564
Limestone	MRZ-2a	4	2,008
	MRZ-2b	2	157
Silica	MRZ-2a	1	119
Pozzolan (essential cement additive)	MRZ-2b	1	72
Gold	MRZ-2a	3	849
Gold	MRZ-2b	8	6,619
Dimension Stone	MRZ-2a	2	527
SOURCE: CGS, 1999.			

Petroleum Resources

As mentioned above, Kern County produces more oil than any other county in the United States (County of Kern, 2004). The valley floor area of Kern County and the surrounding lower elevations of the mountain ranges contain numerous deposits of oil and gas resources, a major economic resource for the County. The proposed project is not located within a known oil production field, nor does the site have known active or abandoned wells (DOGGR, 2019). Additionally, the project site is not located within a designated mineral and petroleum resource site within the Kern County General Plan. The project site is not located within the NR (Natural Resources) or PE (Petroleum Extraction) zoned districts. No significant petroleum resources have been discovered to date in the eastern Mojave Desert.

Sand and Gravel

Construction aggregates are a major economic mineral resource for Kern County (County of Kern, 2004). Sand and gravel have been determined to be important resources for construction, development, and physical maintenance, from highways and bridges to swimming pools and playgrounds. The availability of sand and gravel affects construction costs, tax rates, and affordability of housing and commodities. The State of California has statutorily required the protection of sand and gravel operations. Because transportation costs are a significant portion of the cost of sand and gravel, the long-term availability of local sources of this resource is an important factor in maintaining the economic attractiveness of a

community to residents, business, and industry. The major resources of sand and gravel in Kern County are in stream deposits along the eastern side of the San Joaquin Valley and in the Sierra Nevada foothills, approximately 185 miles north of the project site, and in alluvial fan deposits along the north flank of the San Emidio and Tehachapi Mountains at the southern end of the County, approximately 17 miles west of the project site. Most of the recent alluvium in the San Joaquin Valley floor is composed of sand used as a source of road base material. There are no sand and gravel extraction activities located in the project area.

Borax

Borax constitutes a major economic mineral resource for Kern County (County of Kern, 2004). Borax, a borate mineral (a compound that contains Boron and oxygen), was discovered and put into production in 1872 in Nevada and later, in 1881, in Death Valley. Ironically, for five years the route traveled by Pacific Coast Borax Company's famous twenty mule team trains would pass within 15 miles of a buried deposit that would produce in about six minutes the equivalent tonnage hauled by the mule team during each trip. The discovery of borates in southeastern Kern County in the Kramer District was accidental, when a water well penetrated lakebeds containing colemanite (calcium borate) in 1913. In 1927 underground mining of the minerals kernite and borax began and continued until 1957, when underground operations ceased and open-pit mining began, eventually becoming the largest open-pit mine in California. Annually over 1.8 million tons are removed from this mine, which supplies about 40 percent of the world's supply of borates. There are several other sources of borate minerals in the County (CGS, 1999).

Limestone

Carbonate rocks were initially quarried in 1888 as a source of lime. By 1909 the limestone resources were used for the manufacture of Portland cement during the construction of the first Los Angeles aqueduct. Limestone has been mined continuously since 1921, just northeast of Tehachapi, for the manufacture of Portland cement. The Tehachapi Plant was joined by California Portland Cement Company's Mojave Plant in 1955 and National Cement Company's Lebec Plant in 1976, making Portland cement production second only to borates in terms of economic importance to the region. Cement production is a major economic resource in the County (CGS, 1999).

Dimension Stone

Dimension stone is natural rock materials quarried for the purpose of obtaining blocks or slabs that meet specification as to size (width, length, and thickness) and shape. Color grain texture and pattern, and surface finish, durability, strength, and polish ability are important selection criteria in determining dimension stone. Deposits of marble, sandstone, schist, and other rocks in Kern County have been sources of modest tonnages of building stone which have been utilized as dimension stone, field stone, rubble, and flagstone. Most of the dimension stone (marble and flagstone) was mined until 1904; field stone and flagstone have been mined mostly since about 1952 in the area around Randsburg (CGS, 1999).

Precious Minerals (Gold and Silver)

In terms of total dollar value and number of deposits, gold is the most important metallic mineral commodity that has been mined in Kern County. The earliest mining in Kern County was in 1851 at placer gold deposits in Greenhorn Gulch, which drains into the Kern River about midway between Democrat Springs and

Miracle Hot Springs. The first lode mining was in 1852, and by 1865 gold was being mined in four districts around the Kern River. Gold was first prospected in eastern Kern in the 1860s, with the two largest mines being established in the 1890s. The Yellow Aster and Golden Queen mines located in eastern Kern have yielded almost half of the total gold output of the county. The principal sources of silver in Kern County have been deposits in eastern Kern County. Although gold is the chief mineral in value, silver is predominant by a 5:1 ratio and is an important by-product of the gold ore (CGS, 1999).

Local Setting

The project site is located in the southern portion of Kern County, directly south of the community of Mojave and consists of undeveloped open space. The project site is not designated as a mineral recovery area by the Kern County General Plan, nor is it identified as a mineral resource zone (MRZ) by the Department of Conservation's State Mining and Geology Board. Neither the project site or adjacent areas include land classified as a MRZ (Conservation Biology Institute, 2019). The closest potential mineral resource areas, as designated by the County as 8.4 Mineral and Petroleum (Minimum 5 Arce Parcel Size), are approximately 1.5 and 3 miles to the southwest of the northern project site (USGS, 2019). There are no known oil, gas, or geothermal wells on the project site (DOGGR, 2019). Additionally, there are no active mines or petroleum extraction facilities within or immediately adjacent to the project site (USGS, 2019). The nearest mines to the project site are the Ladd Mine, which has a history of metallic mining, located approximately 1-mile southeast of the project site, and an Unnamed Quarry, with a history of sand and gravel mining, is approximately located 1-mile east of the project site. Both of these mines are classified as past producers (USGS, 2019).

Other mines in the area include the Standard Hill Mine (State Mine ID #91-15-0018) that has a history of metallic mining and is located approximately 1.5 miles southwest of the project site. The Golden Queen/Soledad Mountain Mine (State Mine ID #91-15-0098) is located approximately 3 miles southwest of the project site and is located on and adjacent to Soledad Mountain, an area for precious metals mining and ore processing since the early 1900s. **Figure 4.12-1, *Mines within the Project Vicinity***, shows the mines within a 3-mile radius of the project area. **Table 4.12-2, *Mines within the Project Vicinity***, lists the mines within a 3-mile radius of the project area, their status, and the commodity being mined.

TABLE 4.12-2: MINES WITHIN THE PROJECT VICINITY

Mine Title	Status	Commodity	Distance from Project Site
Standard Hill Mine	Past Producer	Gold	1.5 miles southwest
Golden Queen/Soledad Mountain Mine	Past Producer	Gold, Silver, Copper, Lead, Antimony	3 miles southwest
Ladd Mine	Past Producer	Gold	1 mile southeast
Caltrans #251	Unknown	Sand and gravel; construction	1.60 miles west
Unnamed Quarry	Past Producer	Sand and gravel; construction	1 miles east
Gum Tree Mine	Producer	Gold	2.07 miles southwest
Pride of Mojave Mine	Past Producer	Gold, Silver, Copper, Lead, Manganese	2.24 miles west
Bluebird	Past Producer	Gold	2.70 miles west

SOURCE: USGS, 2019.

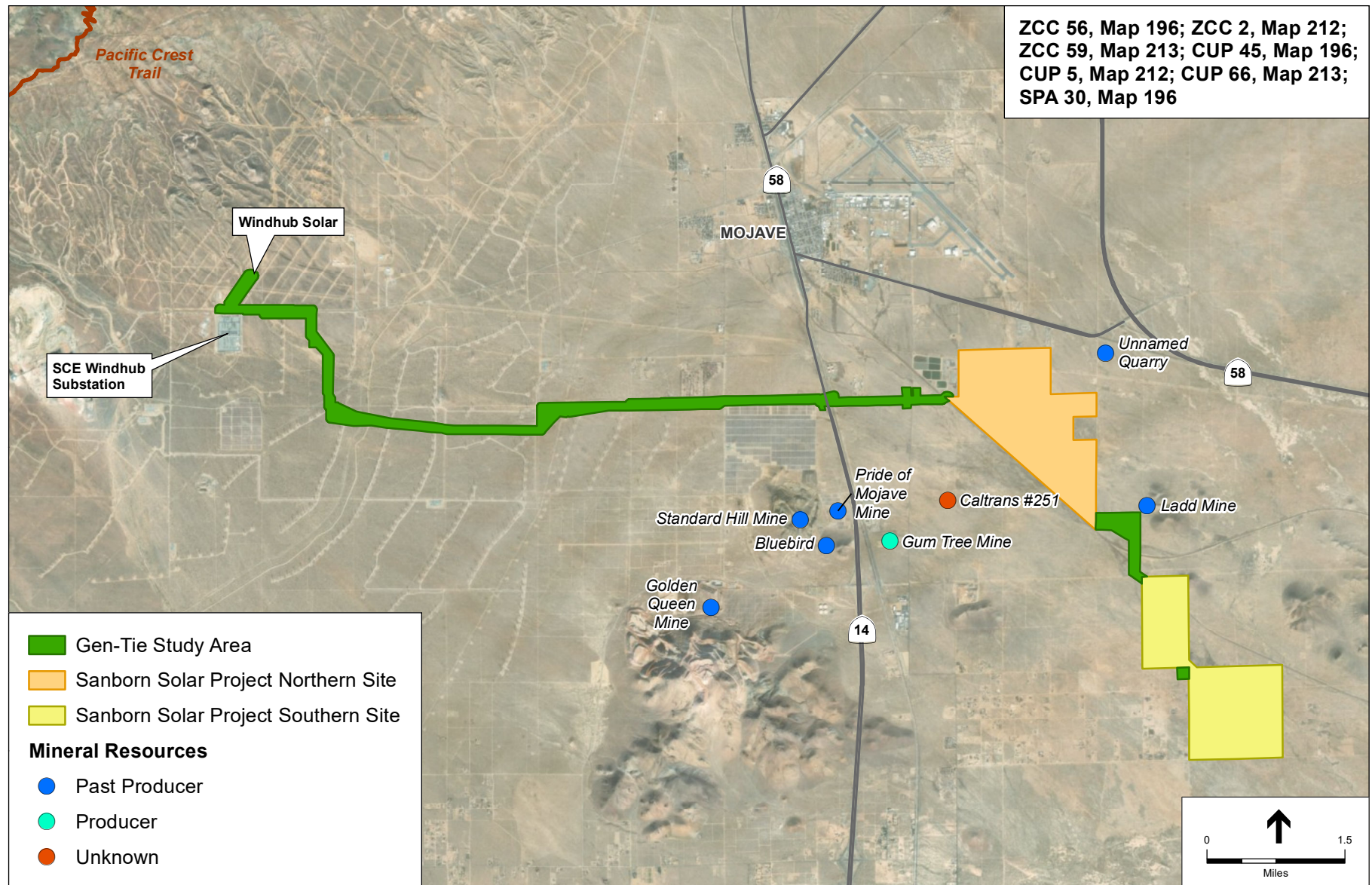


FIGURE 4.12-1: MINES WITHIN THE PROJECT VICINITY

4.12.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Geologic Energy Management Division

As of January 1, 2020, the California Department of Conservation Division of Oil, Gas, and Geothermal Resources (DOGGR) became known as the California Geologic Energy Management Division (CalGEM), a State agency responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. CalGEM's regulatory program promotes the wise development of oil, natural gas, and geothermal resources in California through sound engineering practices, prevention of pollution, and implementation of public safety programs. To implement this regulatory program, CalGEM requires avoidance of building over or near plugged or abandoned oil and gas wells, or requires the remediation of wells to current CalGEM standards (DOC, 2018a).

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA, Public Resources Code, Sections 2710-2796) regulates surface mining operation to assure that adverse environmental impacts are minimized, and that mined lands are reclaimed to a usable condition. SMARA requires the State Geologist to classify land into MRZs according to its known or inferred mineral potential. The primary products are mineral land classification maps and reports. Local agencies are required to use the classification information when developing land-use plans and when making land-use decisions (DOC, 2018b). MRZs are defined in detail in the Regional Setting, above.

Local

Kern County General Plan

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

Chapter 1. Land Use, Open Space and Conservation Element

1.9. Resource

Goals

- Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations that will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources or diminish the other amenities that exist in the County.
- Goal 2: To protect areas of important mineral, petroleum, and agricultural resource potential for future use.
- Goal 3: To ensure that the development of resource areas minimizes effects of neighboring resource lands.
- Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

Policy

- Policy 14: Emphasize conservation and development of identified mineral deposits.
- Policy 17: Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.

Implementation Measure

- Measure H: Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.

Mojave Specific Plan

The policies, goals, and implementation measures in the Mojave Specific Plan for mineral resources that are applicable to the project can be found in Chapter 4, Conservation Element, and are provided below:

Chapter 4. Conservation Element

The key goal of the Conservation Element is to ensure a healthy environment and community. To achieve this goal, the Mojave Specific Plan sets forth policies that will encourage responsible water use, encourage conservation of energy resources, maintain and promote the retention of important desert habitat, protect economically important mineral resources for future extraction, and improve air quality.

Goals

- Goal 5: Designate and control mineral extraction areas.

Objective

Objective 4.5: Conserve known areas of mineral resources by limiting encroachment of incompatible urban uses.

Policy

Policy 4.5.1: Require mining activities to comply with California Surface Mining and Reclamation Act (SMARA) requirements.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. There are no goals, policies, or implementation measures in the West Edwards Road Settlement Specific Plan that are applicable to mineral resources. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detail and refined manner unique to a smaller area of the County. Since there are no applicable goals, policies, or implementation measures within the West Edwards Road Settlement Specific Plan, refer to the applicable policies, goals, and implementation measures of the Kern County General Plan above.

4.12.4 Impacts and Mitigation Measures**Methodology**

The proposed project's potential impacts to mineral resources have been evaluated using a variety of sources, including a review of information from the California Department of Conservation, CGS, and Kern County publications and maps. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project would have a significant adverse effect on mineral resources if it would:

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State; or
- b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Project Impacts

Impact 4.12-1: The project would result in the loss of availability of a known mineral resource that would be of value to the region and residents of the State.

The project site is not located on lands classified as MRZs by the CGS, nor is it zoned for or immediately adjacent to lands designated as Mineral and Petroleum areas by the Mojave Specific Plan or the Kern County General Plan. The closest land designated as Map Code 8.4, Mineral and Petroleum area is a clay deposit located in the northwest portion of the Mojave Specific Plan area boundary, approximately 6.50 miles to the northwest of the project site. Additionally, no active mines or petroleum extraction facilities are located within project vicinity and the nearest active mine is the Gum Tree Mine, approximately 2.07 miles southwest of the northern project site, which is a producer of gold. Given these distances, the proposed project would not interfere with nearby mineral extraction operations and would not result in the loss of land designated for mineral resources. Furthermore, based on the absence of historical surface mining in the immediate area, the potential for surface mining at the project site is considered extremely low. Therefore, the proposed project would not result in the loss of availability of a known mineral resource and the potential impact to future mineral resources is less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.12-2: Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

The project site is not located on a locally important mineral resource recovery site delineated by the Kern County General Plan, Mojave Specific Plan, or West Edwards Road Settlement Specific Plan. Furthermore, the installation of photovoltaic panels, energy storage facilities and gen-tie line would not preclude future onsite mineral resource development, should the site be determined to contain mineral resources in the future. Therefore, loss of availability of mineral resources impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, there are approximately 73 cumulative projects proposed or approved throughout the Antelope Valley in Kern County and in the desert portion of Kern County outside the Antelope Valley, including some utility-scale solar production facilities as shown in Table 3-5, *Cumulative Projects List*. The geographic scope of impacts associated with mineral resources generally encompasses the project site and a 0.25-mile-radius area around the project site. This scope is appropriate because of the localized nature of mineral resource impacts. The closest cumulative project, located within 0.25 miles of the project site, is the Edwards Air Force Base (AFB) solar project located along the southern boundary of the Sanborn Solar Project southern site. However, the project area designated for solar panel development on Edwards AFB is not located on land designated as an MRZ. Furthermore, there are no MRZs or lands designated as Mineral and Petroleum areas by the Kern County General Plan or Mojave Specific Plan within a 0.25-mile-radius area around the project site. Therefore, the proposed project, in conjunction with other related projects, would not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site and would not contribute to any cumulative impacts to mineral resources.

Mitigation Measures

No mitigation would be required.

Level of Significance

Cumulative impacts would be less than significant.

4.13.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for the proposed project and provides an analysis of potential impacts related to noise and ground-borne vibration from project implementation. Additionally, mitigation measures to reduce potential noise and vibration impacts are identified, where necessary. The information and analysis in this section is largely based on the *Noise Assessment Technical Report for the Sanborn Solar Project* prepared by Dudek, Inc., located in Appendix J of this EIR (Dudek, 2019).

Noise Fundamentals

An understanding of the physical characteristics of sound is useful for evaluating environmental noise. The methods and metrics used to quantify noise exposure, human response, and relative judgment of loudness are also discussed, and noise levels of common noise environments are presented.

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and interferes with or disrupts normal activities. The effects of noise on people can be grouped into four general categories:

- Subjective effects (dissatisfaction, annoyance);
- Interference effects (communication and sleep interference, learning);
- Physiological effects (startle response); and
- Physical effects (hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical (i.e., to the body itself) and physiological (i.e., to body functions) effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. The subjective responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, its appropriateness to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Interference effects of environmental noise refer to those effects that interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, and telephone conversations, and interference with sleep. Sleep interference effects can include both awakening from sleep and arousal to a lesser state of sleep.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and amplitude. Frequency describes the sound's pitch (tone) and is measured in cycles per second (Hertz [Hz]), while amplitude describes the sound's pressure (loudness). Because the range of sound pressures that occurs in the environment is extremely large, it is convenient to express these pressures on a logarithmic scale that compresses the wide range of pressures into a more useful range of numbers. The standard unit

of sound measurement is the decibel (dB). Hz is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a given number of times per second. If the drum vibrates 100 times per second, it generates a sound pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived by the ear/brain as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of sensitivity of the healthy human ear.

Sound levels are expressed by reference to a specified national/international standard. The sound pressure level is used to describe sound pressure (loudness) and is specified at a given distance or specific receptor location. In expressing sound pressure level on a logarithmic scale, sound pressure (dB) is referenced to a value of 20 micropascals (μPa). Sound pressure level depends not only on the power of the source but also on the distance from the source to the receiver and the acoustical characteristics of the sound propagation path (absorption, reflection, etc.).

Outdoor sound levels decrease logarithmically as the distance from the source increases. This decrease is due to wave divergence, atmospheric absorption, and ground attenuation. Sound radiating from a source in a homogeneous and undisturbed manner travels in spherical waves. As the sound waves travel away from the source, the sound energy is dispersed over a greater area, decreasing the sound pressure of the wave. Spherical spreading of the sound wave from a point source reduces the noise level at a rate of 6 dB per doubling of distance.

Atmospheric absorption also influences the sound levels received by an observer. The greater the distance traveled, the greater the influence of the atmosphere and the resultant fluctuations. Atmospheric absorption becomes important at distances greater than 1,000 feet. The degree of absorption varies depending on the frequency of the sound as well as the humidity and temperature of the air. For example, atmospheric absorption is lowest (i.e., sound carries farther) at high humidity and high temperatures, and lower frequencies are less readily absorbed (i.e., sound carries farther) than higher frequencies. Over long distances, lower frequencies become dominant as the higher frequencies are more rapidly attenuated. Turbulence, gradients of wind, and other atmospheric phenomena also play a significant role in determining the degree of attenuation. For example, certain conditions, such as temperature inversions, can channel or focus the sound waves, resulting in higher noise levels than would result from simple spherical spreading.

Sound from a tuning fork contains a single frequency (a pure tone), but most sounds in the environment do not consist of a single frequency. Instead, they are a broad band of many frequencies differing in sound level. Because of the broad range of audible frequencies, methods have been developed to quantify these values into a single number representative of human hearing. The most common method used to quantify environmental sounds consists of evaluating all frequencies of a sound according to a weighting system that is reflective of human hearing characteristics. Human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This process is termed “A weighting,” and the resulting dB level is termed the “A-weighted” decibel (dBA).

Because A-weighting is designed to emulate the frequency response characteristics of the human ear and reflect the way people perceive sounds, it is widely used in local noise ordinances and State and federal guidelines, including those of the State of California and Kern County. Unless specifically noted, the use of A-weighting is always assumed with respect to environmental sound and community noise, even if the notation does not include the “A.”

In terms of human perception, a sound level of 0 dBA is the threshold of human hearing and is barely audible by a healthy ear under extremely quiet listening conditions. This threshold is the reference level

against which the amplitude of other sounds is compared. Normal speech has a sound level of 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as discomfort, progressing to pain at still higher levels. Humans are much better at discerning relative sound levels than absolute sound levels. The minimum change in the sound level of individual events that an average human ear can detect is about 1 to 3 dBA. A 3 to 5 dBA change is readily perceived. An increase (or decrease) in sound level of about 10 dBA is usually perceived by the average person as a doubling (or halving) of the sound's loudness.

Because of the logarithmic nature of the decibel, sound levels cannot be added or subtracted directly. However, some simple rules are useful in dealing with sound levels. First, if a sound's acoustical energy is doubled, the sound level increases by 3 dBA, regardless of the initial sound level (e.g., 60 dBA + 60 dB = 63 dBA; 80 dBA + 80 dBA = 83 dBA). However, an increase of 10 dBA is required to double the perceived loudness of a sound, and a doubling or halving of the acoustical energy (a 3 dBA difference) is at the lower limit of readily perceived change.

Although dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most ambient environmental noise includes a mixture of noise from nearby and distant sources that creates an ebb and flow of sound, including some identifiable sources plus a relatively steady background noise in which no particular source is identifiable. A single descriptor, termed the equivalent sound level (L_{eq}), is used to describe sound that is constant or changing in level. L_{eq} is the energy-mean dBA during a measured time interval. It is the "equivalent" sound level produced by a given constant source equal to the acoustic energy contained in the fluctuating sound level measured during the interval. In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum instantaneous (L_{max}) and minimum instantaneous (L_{min}) noise level indicators that represent the root-mean-square maximum and minimum noise levels measured during the monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the acoustic floor for that location.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors L_{10} , L_{50} , and L_{90} may be used, which represent the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of the measured time interval, respectively. Sound levels associated with L_{10} typically describe transient or short-term events, L_{50} represents the median sound level during the measurement interval, and L_{90} levels are typically used to describe background noise conditions.

The Day-Night Average Sound Level (L_{dn} or DNL) represents the average sound level for a 24-hour day and is calculated by adding a 10 dBA penalty to sound levels during the night period (10 p.m. to 7 a.m.). The L_{dn} is the descriptor of choice and used by nearly all federal, State, and local agencies throughout the United States to define acceptable land use compatibility with respect to noise. Within California, the Community Noise Equivalent Level (CNEL) is sometimes used. CNEL is very similar to L_{dn} , except that an additional 5 dBA penalty is applied to the evening hours (7 p.m. to 10 p.m.). Because of the time-of-day penalties associated with the L_{dn} and CNEL descriptors, the L_{dn} or CNEL dBA value for a continuously operating sound source during a 24-hour period will be numerically greater than the dBA value of the 24-hour L_{eq} . Thus, for a continuously operating noise source producing a constant noise level operating for periods of 24 hours or more, the L_{dn} will be 6 dBA higher than the 24-hour L_{eq} value. For convenience, a summary of common noise metrics is provided in **Table 4.13-1**, *Common Noise Metrics*. To provide a frame of reference, common sound levels are presented in **Figure 4.13-1**, *Effects of Noise on People*.

TABLE 4.13-1: COMMON NOISE METRICS

Unit of Measure		Description
dB	Decibel	Decibels, which are units for measuring the volume of sound, are measured on a logarithmic scale, representing points on a sharply rising curve. For example, 10 dB sounds are 10 times more intense than 1 dB sounds, and 20 dB sounds are 100 times more intense. A 10 dB increase in sound level is perceived by the human ear as a doubling of the loudness of the sound.
dBA	A-Weighted Decibel	A sound pressure level that has been weighted to quantitatively reduce the effect of high- and low-frequency noise. It was designed to approximate the response of the human ear to sound.
CNEL	Community Noise Equivalent Level	A metric representing the 24-hour average sound level that includes a 5 dBA penalty during relaxation hours (7 p.m. to 10 p.m.) and a 10 dBA penalty for sleeping hours (10 p.m. to 7 a.m.).
L _{dn}	Day-Night Average Noise	The 24-hour average sound level, expressed in a single decibel rating, for the period from midnight to midnight obtained after the addition of a 10 dBA penalty to sound levels for the periods between 10 p.m. and 7 a.m.
L _{eq}	Equivalent Noise Level	The average acoustic energy content of noise for a stated period of time. The L _{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L _{eq} may also be referred to as the average sound level.
L _{max}	Maximum Noise Level	L _{max} represents the maximum instantaneous noise level experienced during a given period of time. It reflects peak operating conditions and addresses the annoying aspects of intermittent noise.
L _{min}	Minimum Noise Level	L _{min} represents the minimum instantaneous noise level experienced during a given period of time. It reflects baseline operating conditions and is commonly referenced as the noise floor.
L ₁ , L ₁₀ , L ₅₀ , L ₉₀	Percentile Noise Exceedance Levels	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period.



**KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT
SANBORN SOLAR PROJECT**

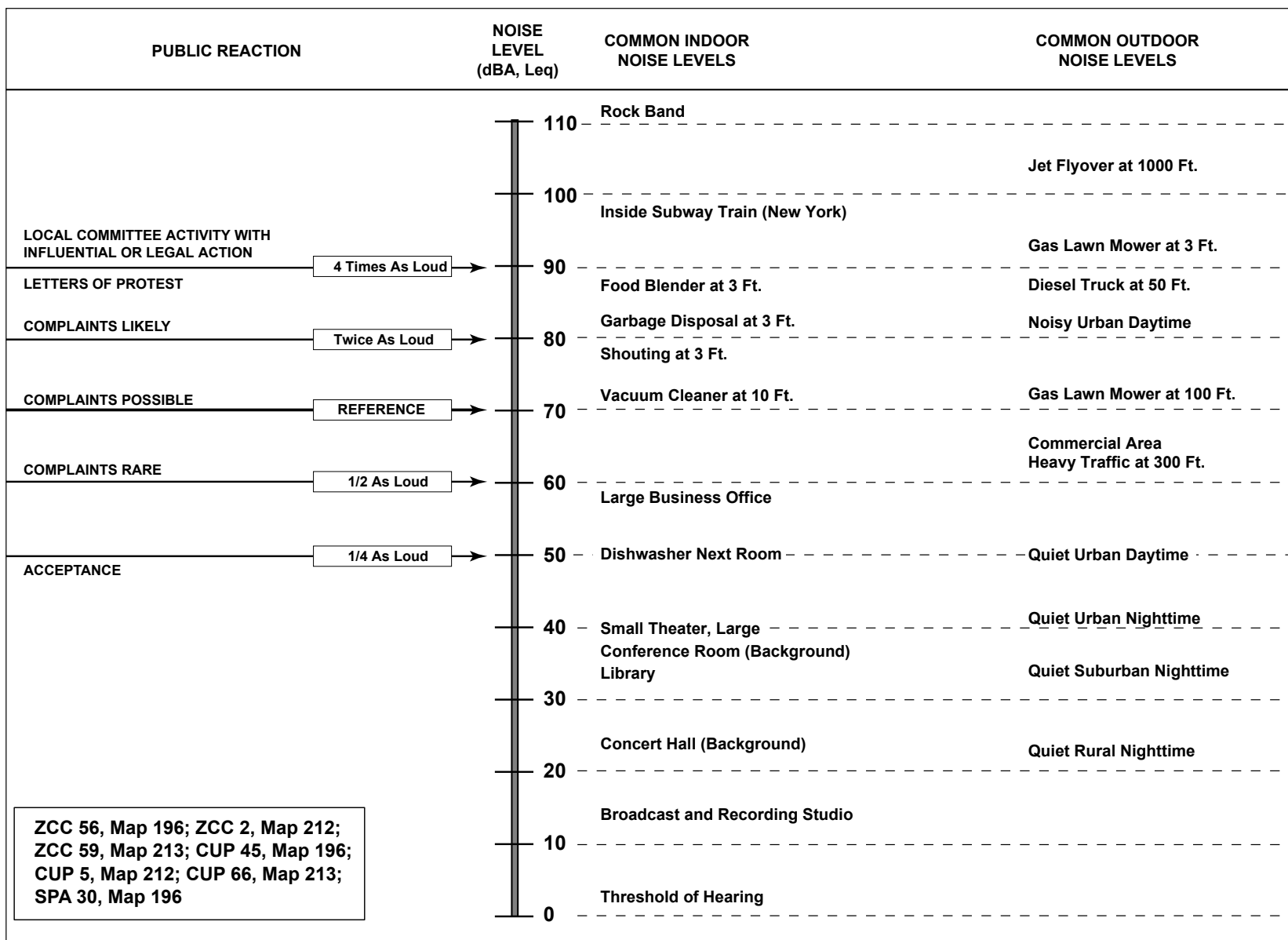


FIGURE 4.13-1: EFFECTS OF NOISE ON PEOPLE

Fundamentals of Vibration

As described in the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual* (FTA, 2018), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. PPV is typically 1.7 to 6 times greater than RMS vibration velocity (FTA, 2018). The decibel notation acts to compress the range of numbers required to describe vibration.

Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration sensitive equipment.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second (in/sec) PPV, while the standard for even the most sensitive and fragile structures is 0.12 in/sec PPV (FTA, 2018).

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold of perception for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is considered to be the approximate dividing line between barely perceptible and distinctly perceptible levels for many people (FTA, 2018).

Sensitive Receptors

Land uses deemed sensitive by the State of California include schools, hospitals, rest homes, and long-term care and mental care facilities, which are considered to be more sensitive to ambient noise levels than others. Many jurisdictions also consider residential uses particularly noise-sensitive because families and individuals expect to use time in the home for rest and relaxation, and noise can interfere with those activities. Some jurisdictions may also identify other noise-sensitive uses such as churches, libraries, and parks. The Noise Element of the County General Plan identifies residences, schools, hospitals, parks, churches, and other similar land uses to be noise sensitive. Furthermore, sensitive noise receptors may also include threatened or endangered biological species, although many jurisdictions have not adopted noise

standards for wildlife areas. Land uses that are generally not considered to be noise-sensitive receptors include office, retail, and commercial developments, with the exception of commercial lodging facilities.

Land uses sensitive to vibration include concert halls, hospitals, libraries, vibration-sensitive research operations, residential areas, schools, and offices.

4.13.2 Environmental Setting

Project Location

The proposed project is located in southern Kern County, California, directly south of the unincorporated community of Mojave. The project consists of two discontinuous sites, each of which would contain solar and energy storage facilities, and together would compose the project site. The northern site is located less than 1 mile south of State Route (SR)-58, and approximately 1 mile east of SR-14. The southern site is directly north of Edwards AFB, approximately 2 miles south of SR-58 and approximately 2 miles east of SR-14. The northern and southern sites of the project are separated by the BNSF railroad tracks. The northern site would be accessed by Lone Butte Road or 10th Street from SR-58, and the southern site would be accessed by Silver Queen Road or Reed Avenue from United Street. A generator tie-in (gen-tie) line would connect the energy generated on site to either the Windhub or Westwind Substation.

The project site is located on generally undeveloped land that has been historically used for grazing operations and consists entirely of 14 privately owned parcels. The project site is generally flat and undeveloped with desert vegetation. The area in the vicinity of the project site consists largely of undeveloped lands, sparse residential dwellings, and dirt roads. Existing development in the project vicinity includes rural access roads, scattered rural residences, and wind and solar energy.

The noise-sensitive receptors in proximity to the project site consist primarily of rural single-family residences including four residences in immediate proximity to the northern site, the nearest at approximately 58 feet; and eight residences within 1,500 feet of the southern site, the nearest at approximately 65 feet to the west, on the north side of Trotter Avenue. Some of the residences may be unoccupied or abandoned; however, ambient noise levels were evaluated at each location (which addresses existing occupancy, as well as, the potential for re-occupation of any of the closest structures). **Figure 4.13-2, Northern Site Noise-Sensitive Receptors and Noise Measurement Locations**, and **Figure 4.13-3, Southern Site Noise-Sensitive Receptors and Noise Measurement Locations**, locate these noise-sensitive receptors (i.e., rural residential structures) adjacent and in proximity to the project site (within approximately 1,000 feet), that were selected for specific noise modeling, as being representative of the worst-case noise exposure levels from the proposed project. The Kern County Noise Ordinance (see below) limits hours of construction for projects located within 1,000 feet of an occupied residential dwelling.

The noise-sensitive receptors located in the vicinity of the proposed gen-tie alignment are also primarily rural residences, which are from approximately 1,195 to 2,600 feet away, clustered in neighborhoods around Arizona Avenue and Winchester Road (north of Purdy Avenue and west of SR-14). There are no rural residences or other noise-sensitive land uses in proximity to either of the alternative substations to which the gen-tie could connect.

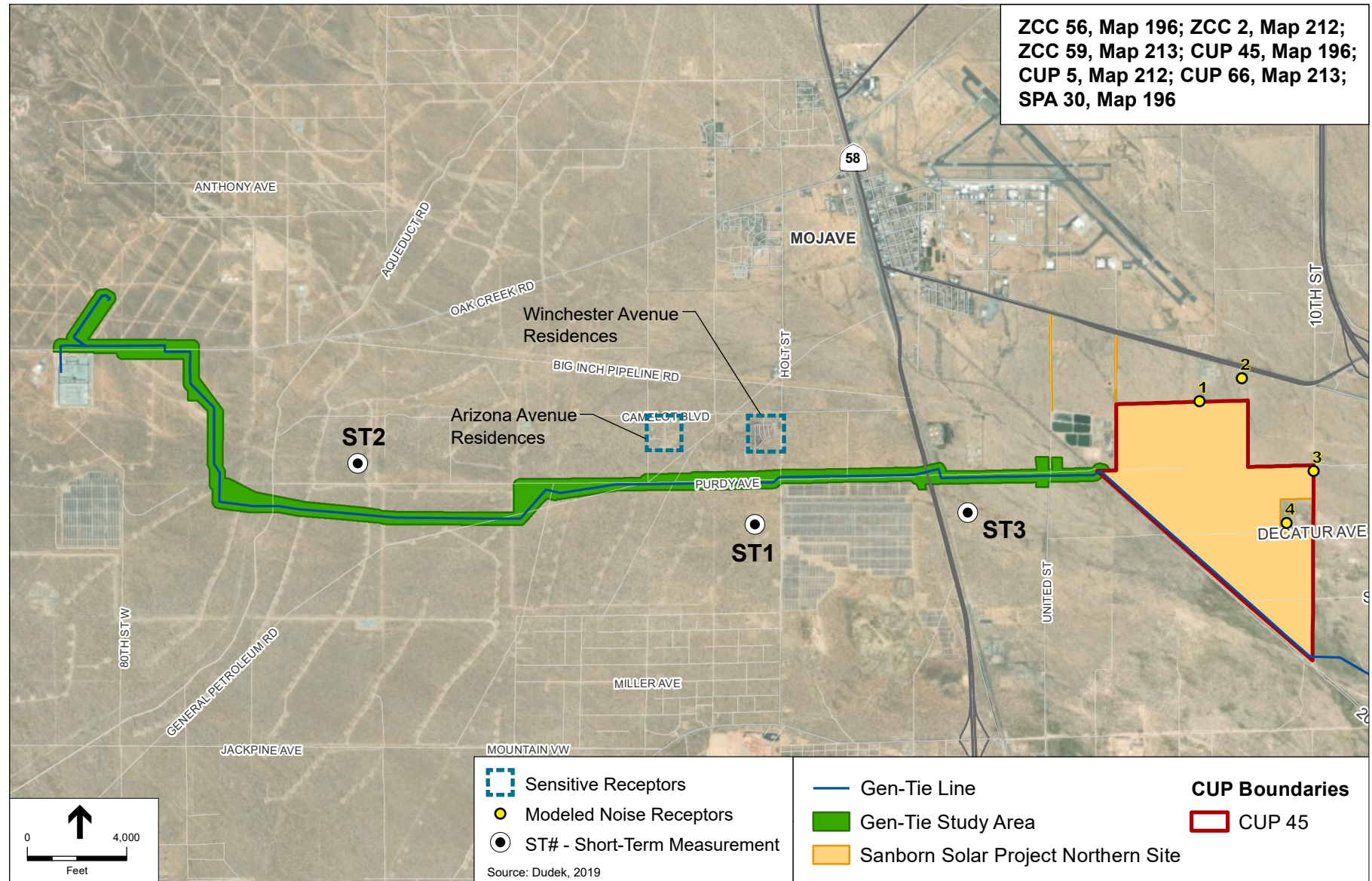


FIGURE 4.13-2: NORTHERN SITE NOISE-SENSITIVE RECEPTORS AND NOISE MEASUREMENT LOCATIONS

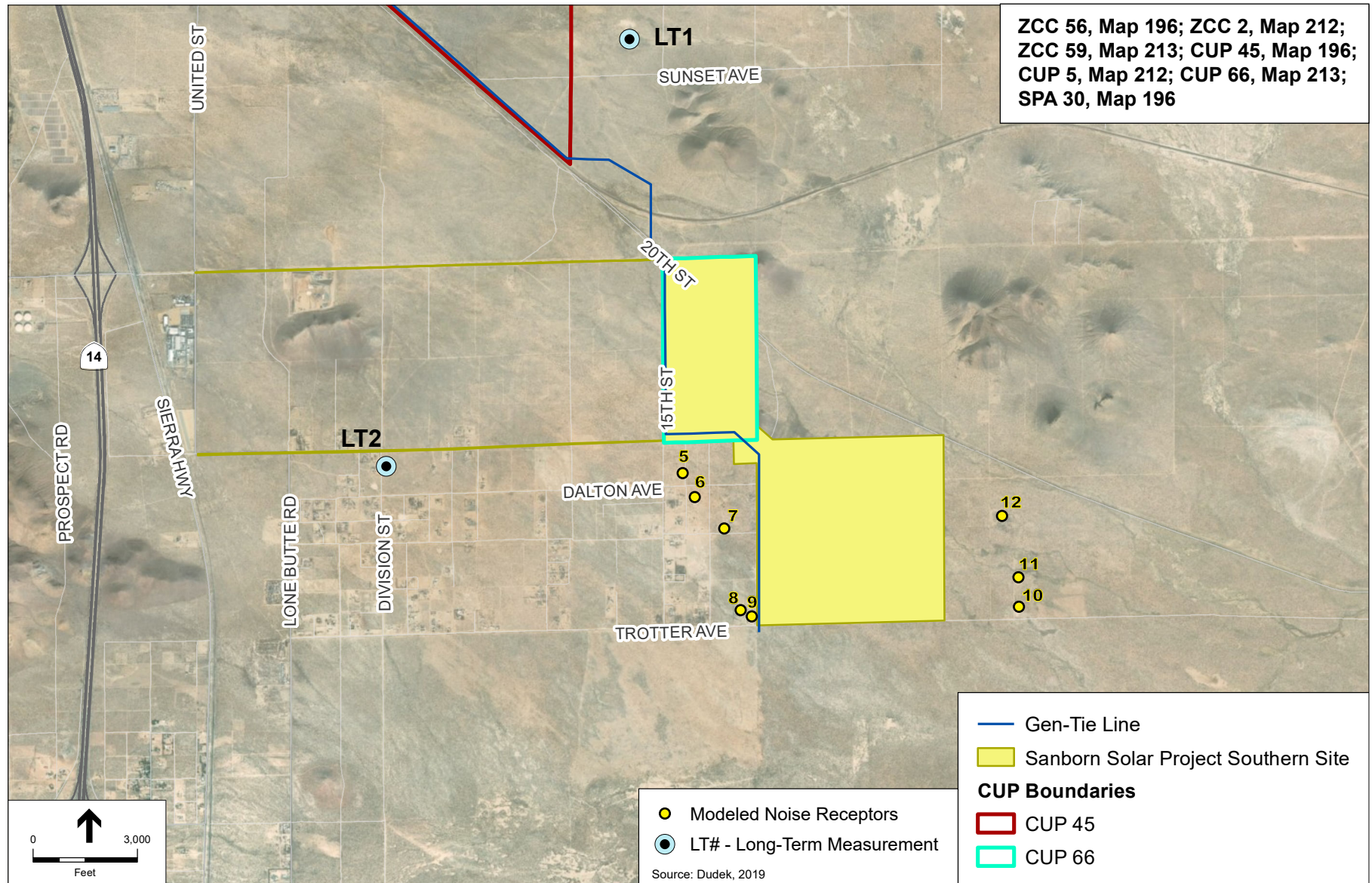


FIGURE 4.13-3: SOUTHERN SITE NOISE-SENSITIVE RECEPTORS AND NOISE MEASUREMENT LOCATIONS

Existing Acoustical Environment

The existing noise environment of the project site is characteristic of its location and adjacent noise sources. The proposed project is located directly south of the unincorporated community of Mojave, approximately 1 mile from SR-58 and SR-14, and adjacent to Edwards AFB. The project site is accessed by local roadways, but surrounded by undeveloped land uses. The airport/airstrip in proximity to the project site are the Mojave Air and Space Port, approximately 0.68 miles north of the northern site, the Rosamond Skypark located approximately 9 miles to the southwest of the southern site, and Edwards AFB, approximately 11.5 miles southeast of the southern site. Therefore, the existing noise environment in the project area is defined primarily by occasional vehicular traffic on area roadways, intermittent aircraft overflights, residential land uses, and bird vocalizations. Daytime ambient noise levels would be anticipated to be generally characteristic of rural areas.

Ambient noise level measurements were conducted in in 2017 in proximity to the project site (Dudek, 2017). Two long-term measurements (24-hour duration) were conducted in the general vicinity of the northern site and the southern site, at locations removed from existing paved roadways; and, three short-term measurements (varying from 6 to 15 minutes) were conducted along the east-west gen-tie alignment, including one measurement adjacent to SR-14, which included manual traffic counts. Noise measurement locations are depicted on Figure 4.13-2.

Sound-level measurements were performed using a total of four different integrating sound-level meters (SLM): a Larson Davis Model 800 American National Standards Institute (ANSI) Type I, a Larson Davis Model 720 ANSI Type II, and two SoftdB Piccolo Models ANSI Type II. ANSI Type I and Type II sound-level meters both have sufficient accuracy to be used for environmental noise evaluation. The SLMs were operated on tripods at a height of 5 feet above ground level, consistent with standards for environmental noise assessment. The SLMs were calibrated before and after each series of measurements using a Larson Davis Model CAL150 calibrator.

The two long-term (LT) measurements (24-hour duration) were conducted in quiet areas removed from major roads to establish ambient noise levels in the region. LT1 was located near Decatur Road and 15th Street, due east of the northern site. LT2 was located near Division Road and Reed Road, in an area to the west of the southern site. **Table 4.13-2, Ambient Noise Level Measurements (dBA)**, summarizes the minimum (L_{min}) and maximum (L_{max}) sound levels recorded for each monitor location during the 24-hour measurement, as well as the calculated 24-hour weighted average noise level (L_{dn}). The SLM locations description, dates of the measurement, and sound sources affecting the monitoring location are also provided in Table 4.13-2 for each monitor location. The long-term monitoring locations are illustrated on Figure 4.13-2.

TABLE 4.13-2: AMBIENT NOISE LEVEL MEASUREMENTS (DBA)

Site	Location	Noise Sources	Dates	L_{dn}	L_{max}	L_{min}
LT1	East of northern site	Distant vehicular traffic on SR-58	06.14.17– 06.15.17	64	64	38
LT2	West of southern site	Distant vehicular traffic on SR-14	06.14.17– 06.15.17	63	61	38

NOTES:

dBA = decibel; LT = long-term roadway noise measurement location; L_{dn} = day-night sound level; L_{max} = maximum sound level; L_{min} = minimum sound level; SR = State Route.

The results of the ambient noise survey from long-term measurements reflect noise levels that range between 63 and 64 dBA L_{dn} (or CNEL) in the general vicinity of the northern site and southern site comprising the project. The primary noise source contributing to the ambient noise environment was traffic, despite the selection of noise monitor locations distant from principal roadways. SR-14 and SR-58 are major roadways and contributors to the ambient noise environment in the vicinity of the study area. As described previously, noise-sensitive receptors should not be exposed to noise levels exceeding 65 dBA L_{dn} (or CNEL); the ambient noise levels recorded at each of the long-term monitor locations would fall within acceptable levels for noise-sensitive land uses as specified in the Kern County General Plan.

One important source of noise generation in the project study area are wind turbines. The gen-tie alignment passes through a sizable wind farm and would also cross SR-14. Short-term noise measurements were conducted within the wind farm along the gen-tie alignment; a short-term noise measurement with manual traffic counts was also completed adjacent to SR-14 along the gen-tie alignment. The results of these short-term noise measurements are presented in **Table 4.13-3, Short-Term Ambient Noise Level Measurements (Existing) (dBA)**. The short-term roadway noise measurement locations are illustrated on Figure 4.13-2.

TABLE 4.13-3: SHORT-TERM AMBIENT NOISE LEVEL MEASUREMENTS (EXISTING) (DBA)

Site	Measurement Date	Measurement Time Period	L_{eq}	L_{max}	L_{min}	Remarks
ST1	06.14.17	3:25 p.m.– 3:35 p.m.	34	51	31	Purdy Road at Holt Street, several turbines
ST2	06.14.17	3:45 p.m.–4 p.m.	52	58	51	Purdy Road at 54th Street, many turbines
ST3	06.14.17	4:30 p.m.– 4:36 p.m.	75	82	59	SR-14 at 50 feet from edge of pavement, 202 cars, 18 heavy trucks, 7 medium trucks

NOTES:

dBA = decibel; L_{eq} = equivalent sound level; L_{max} = maximum sound level; L_{min} = minimum sound level; SR = State Route; ST = short-term roadway noise measurement location

The highest recorded average noise level (75 dBA L_{eq}) was associated with traffic on SR-14 at a distance of approximately 50 feet from the edge of pavement. Based on an outdoor attenuation rate of 4.5 dBA with a doubling of distance from a roadway (applying soft-site conditions), noise levels would diminish to 65 dBA L_{eq} at approximately 230 feet from the edge of pavement. The measurements conducted within various areas of the existing wind farm had average noise levels ranging from 34 to 52 dBA L_{eq} . With the exception of areas within 230 feet of SR-14, current average noise levels in the study area would generally not exceed acceptable levels for noise-sensitive land uses.

4.13.3 Regulatory Setting

Federal

Department of Defense, Edwards Air Force Base Air Installation Compatible Use Zones

The Department of Defense requires military aviation facilities to prepare an Air Installation Compatible Use Zones (AICUZ) study to protect community safety and health, promote appropriate development in the vicinity of military airfields, and protect taxpayer's investment in national defense. The currently adopted AICUZ study for Edwards AFB indicates areas affected by current noise and safety impacts are confined within the boundaries of the installation.

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration (FAA), Code of Federal Regulations (CFR) Title 14, Part 150, prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. CFR Title 14 also identifies those land uses that are normally compatible with various levels of exposure to noise by individuals. FAA has determined that interior sound levels up to 45 dBA L_{dn} (or CNEL) are acceptable within residential buildings. FAA also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA L_{dn} (or CNEL).

Noise Control Act of 1972 (42 USC 4910)

This act establishes a national policy to promote an environment for all Americans to be free from noise that jeopardizes their health and welfare. To accomplish this, the act establishes a means for the coordination of federal research and activities in noise control, authorizes the establishment of federal noise emissions standards for products distributed in commerce, and provides information to the public with respect to the noise-emission and noise-reduction characteristics of such products.

United States Environmental Protection Agency, Environmental Noise Levels

The United States Environmental Protection Agency (USEPA) provided guidance on environmental noise levels in *Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety* (USEPA, 1974), commonly referenced as the "Levels Document," that establishes an L_{dn} of 55 dBA as the requisite level, with an adequate margin of safety, for areas of outdoor uses, including residences and recreation areas. This document does not constitute USEPA regulations or standards but identifies safe levels of environmental noise exposure without consideration of costs for achieving these levels or other potentially relevant considerations.

Federal Energy Regulatory Commission Guidelines, Noise Guidelines

Federal Energy Regulatory Commission (FERC) *Noise Guidelines on Noise Emissions from Compressor Stations, Substations, and Transmission Lines* (18 CFR 157.206[d]5), require that the noise attributable to any new compressor stations, compression added to an existing station, or any modification, upgrade, or update of an existing station must not exceed a L_{dn} of 55 dBA at any pre-existing noise-sensitive area (such as schools, hospitals, or residences). This policy was adopted based on the USEPA-identified level of significance of 55 L_{dn} dBA.

Department of Housing and Urban Development Environmental Standards

The Department of Housing and Urban Development regulations (24 CFR Part 51) set forth the following exterior noise standards for new home construction assisted or supported by the Department:

- 65 L_{dn} or less – Acceptable
- > 65 L_{dn} and < 75 L_{dn} – Normally unacceptable, appropriate sound attenuation measures must be provided
- > 75 L_{dn} – Unacceptable

The Department of Housing and Urban Development's regulations do not contain standards for interior noise levels. Rather, a goal of 45 dBA is set forth, and attenuation requirements are geared to achieve that goal.

Occupational Safety and Health Administration Occupational Noise Exposure

Occupational Safety and Health Administration (OSHA), *Occupational Noise Exposure; Hearing Conservation Amendment* (Federal Register 48 [46], 9738–9785, 1983) stipulates that protection against the effects of noise exposure shall be provided for employees when sound levels exceed 90 dBA over an 8-hour exposure period. Protection shall consist of feasible administrative or engineering controls. If such controls fail to reduce sound levels to within acceptable levels, personal protective equipment shall be provided and used to reduce exposure of the employee. Additionally, a Hearing Conservation Program must be instituted by the employers whenever employee noise exposure equals or exceeds the action level of an 8-hour time-weighted average sound level of 85 dBA. The Hearing Conservation Program requirements consist of periodic area and personal noise monitoring, performance and evaluation of audiograms, provision of hearing protection, annual employee training, and record keeping.

State

The California Department of Health Services has studied the correlation of noise levels and their effects on various land uses and established guidelines for evaluating the compatibility of various land uses, for the noise elements of local general plans, as a function of community noise exposure. The guidelines are the basis for most noise element land use compatibility guidelines in California.

The State requires all municipalities to prepare and adopt a comprehensive long-range general plan. General plans must contain a noise element (California Government Code Section 65302(f) and Section 46050.1 of the Health Safety Code). The requirements for the noise element of the general plan include describing the noise environment quantitatively using a cumulative noise metric such as CNEL or DNL, establishing noise/land use compatibility criteria, and establishing programs for achieving and/or maintaining land use compatibility. Noise elements should address all major noise sources in the community, including mobile and stationary noise sources. In California, most cities and counties have also adopted noise ordinances which serve as enforcement mechanisms for controlling noise.

The land use compatibility for community noise environment chart identifies the normally acceptable range for several different land uses, as shown in **Figure 4.13-4, *Land Use Compatibility for Community Noise Environment***. Persons in low-density residential settings are most sensitive to noise intrusion, with noise levels of 60 dBA CNEL and below are considered “acceptable.” For land uses such as schools, libraries, churches, hospitals, and parks, acceptable noise levels are up to 70 dBA CNEL.

CEQA *Guidelines* (PRC Section 21000 et seq.) requires the identification of “significant” environmental impacts and their feasible mitigation. Section XI of Appendix G to the CEQA *Guidelines* (CCR Title 14, Appendix G) lists some indicators of potentially significant impacts, which are included below under the heading “Thresholds of Significance”.

The State has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA CNEL or L_{dn} in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA CNEL or L_{dn} . Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

The State also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass-by standard is consistent with the federal limit of 80 dBA at 15 meters. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by State and local law enforcement officials.

Land Use Category	Community Noise Exposure – L _{dn} or CNEL (dBA)							
	50	55	60	65	70	75	80	
Residential – Low Density Single Family, Duplex, Mobile Home	100%	100%	100%	100%	100%	100%	100%	
Residential – Multi-Family	100%	100%	100%	100%	100%	100%	100%	
Transient Lodging – Motel/Hotel	100%	100%	100%	100%	100%	100%	100%	
Schools, Libraries, Churches, Hospitals, Nursing Homes	100%	100%	100%	100%	100%	100%	100%	
Auditorium, Concert Hall, Amphitheaters	100%	100%	100%	100%	100%	100%	100%	
Sports Arena, Outdoor Spectator Sports	100%	100%	100%	100%	100%	100%	100%	
Playgrounds, Neighborhood Parks	100%	100%	100%	100%	100%	100%	100%	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	100%	100%	100%	100%	100%	100%	100%	
Office Buildings, Business, Commercial and Professional	100%	100%	100%	100%	100%	100%	100%	
Industrial, Manufacturing, Utilities, Agriculture	100%	100%	100%	100%	100%	100%	100%	

Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.

SOURCE: State of California, Governor's Office of Planning and Research, 2003.

FIGURE 4.13-4 LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to noise. The policies, goals, and implementation measures in the Kern County General Plan related to noise that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

The noise element of a general plan is a mandatory element as required by California Government Code Section 65302(f). The State requires that local jurisdictions prepare statements of policy indicating their intentions regarding noise and noise sources, establish desired maximum noise levels according to land use categories, set standards for noise emission from transportation and fixed-point sources, and prepare implementation measures to control noise.

The Noise Element of the Kern County General Plan identifies noise-sensitive land uses and noise sources, defines areas of noise impact, and establishes goals, policies, and programs to ensure that County residents are protected from excessive noise, and to develop an implementation program which could effectively mitigate potential noise problems. The implementation measures have been designed so that they will not subject residential or other sensitive noise land uses to exterior noise levels in excess of 65 dBA L_{dn} , and interior noise levels in excess of 45 dBA L_{dn} .

In accordance with the Energy Element of the Kern County General Plan, Policy 10, the County may also require the preparation of an acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses.

Applicable goals, policies, and implementation measures from the Noise and Energy Elements of the County's General Plan, relevant to the proposed project, are summarized below.

Chapter 3. Noise Element

3.3. Sensitive Noise Areas

Goals

- Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.
- Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policies

- Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses,
- Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise,
- Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.
- Policy 7: Employ the best available methods of noise control.

Implementation Measures

- Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.
- Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.
- Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise-sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn} .
- Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:
- Be the responsibility of the applicant.
 - Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
 - Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.
- Measure I: Noise analyses shall include recommended mitigation, if required, and shall:
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
 - Include estimated noise levels, in terms of CNEL, for existing and projected future (10–20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.
 - Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
 - Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

Chapter 5. Energy Element

Policies

Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The goal, policies, and implementation measures in the Mojave Specific Plan for noise and vibration applicable to the project is provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 8 Noise Element

Goals

Goal 1: Evaluate transportation-related noise.

Goal 2: Evaluate noise during land use planning efforts.

Objectives

Objective 8.1: Minimize the effects of transportation-related noise.

Objective 8.2: Minimize the effects of noise through proper land use planning.

Policies

Policy 8.1.1: Reduce transportation-related noise impacts on sensitive land uses (as defined in the Kern County Noise Element) through the use of noise control measures.

Policy 8.1.2: Incorporate sound-reduction designs in development projects impacted by transportation-related noise.

Policy 8.1.3: Identify potential impacts from transportation noise during the planning stages of the development process. Mitigation measures (such as buffering, clustering or sound walls) shall be used as needed to meet County Noise Element and/or Airport Land Use Compatibility Plan standards.

- Policy 8.2.3: Ensure consistency of development proposals with the Kern County Airport Land Use Compatibility Plan and Mojave Specific Plan to reduce potential for noise conflicts.
- Policy 8.2.4: Identify noise-impact areas exposed to existing or projected noise levels exceeding 65 dB CNEL (exterior) or the performance standards described in this element.
- Policy 8.2.6: Industrial uses adjacent to residences shall minimize potential noise and health hazards. Buffers may be required and shall be reviewed during the Precise Development review process and may be imposed when necessary to maintain noise standards. Landscaping, picnic areas, parking, offices, warehousing, or other more compatible uses may be incorporated within identified buffer zones.
- Policy 8.2.7: Noise attenuation measures as defined by the Kern County Noise Element, Development Standards, and any pertinent noise studies (such as setbacks, clustering, berming, and sound walls) shall serve as a guide for future planning and development decisions.
- Policy 8.2.9: Amendments to the plan proposing sensitive uses adjacent to noise contours above 65 CNEL (see Figure 8-2 and 8-1) shall require preparation of a site-specific noise study including proposed mitigation.

Implementation Measures

- Implementation Measure G-2: Noise Attenuation Measures Noise attenuation measures (such as setbacks, clustering, berming, and sound walls) shall be required as conditions of project approval prior to or as part of construction in areas subject to excessive noise. Examples of cases that may require such attenuation measures include:
- a) Commercial and residential development where noise levels exceed adopted standards in the Kern County Noise Element.
 - b) Residential and other sensitive uses with direct exposure to highway activities and/or railroad noise.
 - c) Between residential land uses and commercial or industrial land uses.
- Implementation Measure G-3: Airport-Related Noise and Safety Implement the following measures to reduce the impact of airport-related noise and safety issues on development in surrounding areas:
- a) All discretionary development proposals shall be reviewed for compatibility with the adopted Airport Land Use Compatibility Plan. Appropriate limitations and conditions shall be incorporated to address compatibility with the Mojave Airport and encroachment issues for the Edwards Air Force Base, Naval Air Weapons Station China Lake, and the Military Complex Airspace.
- Incompatible uses shall not be permitted unless appropriate findings regarding public health, safety, and military readiness can be made.

Implementation Measure G-4: Vehicular Noise. Implement the following measures to reduce the impact of vehicle-related noise on development in adjacent areas:

- a) New construction shall include sound walls as recommended by required acoustic studies.
- b) New development shall be required to identify and mitigate for vehicular noise impacts as a condition of approval for construction of new noise-sensitive land uses.
- c) Request that other agencies construct noise barriers as part of future highway, roadway, and rail projects to mitigate significant impacts beyond County jurisdiction.
- d) Landscaping or other project design measures are required in all new public and private projects to address potentially significant aesthetics impacts associated with noise barriers.
- e) Regulate traffic flow and coordinate with the California Highway Patrol to enforce speed limits.
- f) Incorporate noise impact considerations, particularly the relationship of parking ingress/egress, loading, and refuse collection areas to surrounding residential and other noise-sensitive uses.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. There are no applicable goals, policies, or implementation measures in the West Edwards Settlement Specific Plan for noise and vibration. The West Edwards Road Settlement Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the West Edwards Road Settlement Specific Plan are incorporated by reference.

Kern County Zoning Ordinance

Section 19.80.030.S(1) of the Kern County Zoning Ordinance restricts noise generated by commercial or industrial uses within 500 feet of a residential use or residential zone district. The commercial or industrial use shall not generate noise that exceeds an average 65 dB L_{dn} between the hours of 7 a.m. and 10 p.m. and shall not generate noise that exceeds 65 dB, or which would result in an increase of 5 dB or more from ambient sound levels, whichever is greater, between the hours of 10 p.m. and 7 a.m. Commercial or industrial facilities that are located in the M-3 zone district are exempt from these noise-generation restrictions.

Kern County Code of Ordinances

The Kern County Code of Ordinances, Chapter 8.36 (Noise Control), includes acceptable hours of construction, and limitations on construction related noise impacts on adjacent sensitive receptors.

Section 8.36.020 - Prohibited sounds

It is unlawful for any person to do, or cause to be done, any of the following acts within the unincorporated areas of the county:

- H. To create noise from construction, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:
 - 1. The resource management director or a designated representative may for good cause exempt some construction work for a limited time.
 - 2. Emergency work is exempt from this section.

Groundborne Vibration

There are currently no federal, State, or local regulatory standards for groundborne vibration. However, the California Department of Transportation (Caltrans) has developed vibration criteria based on potential structural damage risks and human annoyance in the Caltrans *Transportation and Construction Vibration Guidance Manual* (Caltrans, 2013). Caltrans' threshold criteria pertaining to building damage and human annoyance for continuous and transient events are summarized in **Table 4.13-4**, *Vibration Criteria for Structural Damage*, and **Table 4.13-5**, *Vibration Criteria for Human Annoyance*, respectively below.

TABLE 4.13-4: VIBRATION CRITERIA FOR STRUCTURAL DAMAGE

Structure and Condition	Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
Newer residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
NOTES:		
Transient sources create a single isolated vibration event, such as blasting or ball drops. Traffic, train, and most construction vibrations are considered continuous.		
in/sec ppv = inches per second peak particle velocity; — = not available.		
SOURCE: Caltrans, 2013.		

As indicated in Table 4.13-4, the threshold at which there is a risk to normal structures from continuous events is 0.3 in/sec PPV for older residential structures and 0.5 in/sec PPV for newer building construction. A threshold of 0.5 in/sec PPV also represents the structural damage threshold applied to older structures for transient vibration sources.

TABLE 4.13-5: VIBRATION CRITERIA FOR HUMAN ANNOYANCE

Human Response	Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.1
Annoying to people in buildings	—	0.2
Severe	2.0	0.4

NOTES:
 Transient sources create a single isolated vibration event, such as blasting or ball drops. Traffic, train, and most construction vibrations are considered continuous.
 in/sec ppv = inches per second peak particle velocity; — = not available.
 SOURCE: Caltrans, 2013.

As shown in Table 4.13-5, with regard to human perception, vibration levels would begin to become distinctly perceptible at levels of 0.04 in/sec PPV for continuous events and 0.25 in/sec PPV for transient events. Continuous vibration levels are considered annoying for people in buildings at levels of 0.2 in/sec PPV.

4.13.4 Impacts and Mitigation Measures

Methodology

Noise impacts associated with the proposed project were assessed in this section based primarily on the *Noise Assessment Technical Report for the Sanborn Solar Project* (Dudek, 2019), located in Appendix J of this EIR. Potential significant impacts associated with the project were evaluated on a qualitative basis through a review of existing literature and available information, and by using professional judgment in comparing the anticipated proposed project effects on noise with existing conditions. The evaluation of proposed project impacts is based on significance criteria established by Appendix G of the CEQA *Guidelines*, which the Lead Agency has determined to be appropriate criteria for this draft EIR.

Short-Term Construction Noise

Predicted noise levels at nearby noise-sensitive land uses were calculated utilizing typical noise levels and usage rates associated with construction equipment, derived from the U.S. Department of Transportation, Federal Highway Administration's (FHWA) Roadway Construction Noise Model (version 1.1) and representative data obtained from similar construction projects. Construction noise levels were predicted assuming an average noise attenuation rate of 6 dB per doubling of distance from the source and an excess noise-attenuation rate of 1.5 dB per 1,000 feet.

Long-term Operational Stationary-Source Noise

Predicted noise levels associated with onsite stationary noise sources and activities were calculated based on representative data obtained from existing literature and noise assessments prepared for similar projects. Operational noise levels were predicted assuming an average noise-attenuation rate of 6 dB per doubling of distance from the source and an excess noise-attenuation rate of 1.5 dB per 1,000 feet. Operational noise levels were calculated at the project site property lines and nearby land uses for comparison to the County noise standards.

Long-term Operational Traffic Noise

Traffic noise levels were calculated using the FHWA roadway noise prediction model (FHWA-RD-77-108) based on California vehicle reference noise emission factors and traffic data obtained from the traffic analysis prepared for the proposed project. Additional input data included vehicle speeds, ground attenuation factors, and roadway widths. Predicted noise levels were calculated at a distance of 100 feet from the near-travel-lane centerline. Increases in traffic noise levels attributable to the proposed project were determined based on a comparison of predicted noise levels, with and without project implementation.

Construction Groundborne Vibration

Groundborne vibration levels associated with construction-related activities were evaluated utilizing typical groundborne vibration levels rates associated with construction equipment, obtained from FTA's *Transit Noise and Vibration Impact Assessment Manual* (FTA, 2018). Groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby land uses and typically applied criteria for structural damage and human annoyance (refer to Tables 4.13-4 and 4.13-5).

Operational Vibration Impacts

Since operation of the proposed project would involve minor operational traffic, including O&M staff and regular maintenance truck (generating approximately 0.076 in/sec PPV), and panel washing activity (not measurable), project-related vibration impacts would not have any measurable effect on the adjacent offsite sensitive receptors.

Thresholds of Significance

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

A project could have a significant noise-related adverse effect if it would result in:

- a. Generation of a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies;
- b. Generation of, excessive ground borne vibration or ground borne noise levels;

- c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- d. For a project located within the Kern County Airport Land Use Compatibility Plan, would the project expose people residing or working in the project area to excessive noise levels.

Kern County determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts or less-than-significant impacts and, therefore, are scoped out of this EIR. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding these issue areas:

- d. For a project located within the Kern County Airport Land Use Compatibility Plan, would the project expose people residing or working in the project area to excessive noise levels.

As discussed in the NOP/IS, the airport/airstrip in proximity to the project site are the Mojave Air and Space Port, approximately 0.68 miles north of the northern site, the Rosamond Skypark located approximately 9 miles to the southwest of the southern site, and Edwards AFB, approximately 11.5 miles southeast of the southern site. The northern portion of the northern site is located within the Airport Influence Area (AIA) of the Mojave Air and Space Port, as identified in the Kern County ALUCP; however, is not located within the airport noise contours. The proposed project is located entirely outside the AIAs of the Rosamond Skypark, and Edwards AFB. Therefore, the proposed project is not expected to expose individuals working in the project area to excessive noise levels resulting from any airports located within the ALUCP, and no impact would result. Therefore, these issues were determined to not require further review in this Draft EIR.

Substantial Temporary Ambient Noise Increase in Excess of Standards

Temporary noise impacts associated with the proposed project would be associated with short-term construction activities, which would include the use of various types of equipment commonly associated with site preparation, grading, road, infrastructure, and solar array construction. Short-term construction noise impacts would be considered to have a significant impact if construction would exceed applicable noise standards or result in substantial increases in ambient noise levels at the nearest noise-sensitive land uses during the more noise-sensitive evening and nighttime hours.

Kern County regulates noise levels per the requirements of Chapter 8.36 (Noise Control) of the Kern County Code of Ordinances, which establishes hours of construction and limitations on construction-related noise impacts on adjacent sensitive receptors. Specifically, construction activities that are audible to a person with average hearing ability at a distance of 150 feet from the construction site, or if the construction site is within 1,000 feet of an occupied residential dwelling, are prohibited between the hours of 9 p.m. and 6 a.m. on weekdays and 9 p.m. and 8 a.m. on weekends. Given that a 5 dBA change in the community noise environment is considered to be readily perceptible by the human ear, construction activities occurring outside of the acceptable construction hours established by the County that increases the ambient noise levels at a noise-sensitive land use by 5 dBA or more is considered to be a violation of the County's construction noise regulations.

Excessive Groundborne Vibration

For the purposes of assessing potential groundborne vibration impacts associated with the proposed project, Caltrans's vibration criteria for potential structural damage risks and human annoyance was used in this analysis. Accordingly, groundborne vibration levels would be considered significant if predicted short-term

construction or long-term operational groundborne vibration levels attributable to the proposed project would exceed the recommended criteria for structural damage or human annoyance (i.e., 0.25 and 0.1 in/sec PPV, respectively) at the nearest offsite existing structure (refer to Tables 4.13-4 and 4.13-5). These thresholds are considered to represent a conservative level at which construction-related activities would result in either structural damage or human annoyance. The proposed project would not result in the use of equipment or processes that would result in long-term or permanent increases in groundborne vibration.

Substantial Permanent Ambient Noise Increase in Excess of Standards

The Federal Interagency Committee on Noise (FICON) developed guidance to be used for the assessment of project-generated increases in noise levels that take into account the ambient noise level (FICON, 1992). The FICON recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in transportation noise impact assessments. The FICON-recommended noise evaluation criteria are summarized in **Table 4.13-6**, *FICON Recommended Criteria for Evaluation of Increases in Ambient Noise Level*.

TABLE 4.13-6: FICON RECOMMENDED CRITERIA FOR EVALUATION OF INCREASES IN AMBIENT NOISE LEVELS

Ambient Noise Level Without Project	Increase Required for Significant Impact
< 60 dB	5.0 dB, or greater
60–65 dB	3.0 dB, or greater
> 65 dB	1.5 dB, or greater

SOURCE: FICON 1992.

Long-term permanent increases in noise levels would be primarily associated with onsite operational activities, as well as potential increases in vehicular traffic along area roadways. Based on the noise standards in the Kern County General Plan, long-term operational noise impacts would be considered significant if the proposed project would result in a substantial increase in ambient noise levels that would exceed the Plan's established noise standards at the outdoor activity area of the nearest noise-sensitive land use. The assessment of transportation impacts is based on the average-daily noise metric (in dBA $L_{dn}/CNEL$). In instances where the ambient noise level is greater than the noise standard, the applicable noise standard for non-transportation noise sources would be the ambient noise level.

As shown in Table 4.13-6 a noise level increase of 5.0 dB, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. These standards are based on a normally acceptable exterior average-daily noise level of 60 dBA, with regard to aircraft noise exposure. The rationale for the FICON-recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project, above the specified noise standard, is sufficient to cause significant increases in annoyance. To put it another way, where ambient noise levels exceed an established standard, lower increases in these ambient noise levels can result in increased levels of annoyance.

Thus, for the purposes of assessing transportation-related noise impacts associated with a substantial increase in ambient noise levels, a substantial increase would be defined as an increase of 5.0, or greater, where average-daily noise levels, without project implementation, are less than 60 dBA CNEL/L_{dn}. Within areas where the average-daily noise levels range from 60 to 65 dBA CNEL/L_{dn}, a substantial increase would be defined as an increase of 3 dBA, or greater. Increases of 1.5 dBA, or greater, would be considered substantial in areas where the average-daily noise levels, prior to project implementation, already exceed the County's noise standard of 65 dBA CNEL/L_{dn}. For non-transportation noise sources, an increase in ambient noise levels that would also exceed applicable noise standards would be considered substantial and would have a potentially significant impact.

Project Impacts

Impact 4.13-1: The project would result in generation of a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.

As discussed under Section 4.13-2, *Environmental Setting*, daytime ambient noise levels were measured in the project vicinity. Measurements conducted within various areas of the existing wind farm had average noise levels ranging from 34 to 52 dBA L_{eq}, with the highest recorded average noise level (75 dBA L_{eq}) was associated with traffic on SR-14 at a distance of approximately 50 feet from the edge of pavement. As discussed in further detail below, with construction noise levels at the nearest residences ranging from approximately 84 dBA L_{eq}, project construction would cause a temporary or periodic increase in ambient noise levels during the construction, which in some locations could be considered a substantial increase (an increase of 5 dB, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dBA), and thereby a potentially significant impact.

Construction activities associated with the proposed project would generally be limited to the daytime hours in accordance with the hourly limitations specified in the Kern County Code of Ordinances, with certain limited exceptions. To ensure compliance with the County's noise-control ordinance, these hourly limitations have been included in Mitigation Measure MM 4.13-1. Additional components to this mitigation measure have also been included to further minimize noise levels associated with daytime construction activities and potential impacts to occupants of nearby residential dwellings. Implementation of Mitigation Measures MM 4.13-1 and MM 4.13-2 are designed to reduce impacts to the extent feasible during construction activities.

Furthermore, activities associated with a potential decommissioning of the project would result in similar or lower noise levels than those that would be experienced under the loudest phases of construction. Therefore, decommissioning activity noise levels could result in disturbances of noise-sensitive receptors in the project vicinity similar to those during the loudest construction phases if activities are not restricted to daytime hours. To reduce any potential noise impact to offsite sensitive receptors, Mitigation Measures MM 4.13-1 and MM 4.13-2 would be implemented.

Construction

Construction Traffic

During project construction, the rural residences located nearest to the project site would be exposed to vehicle traffic noise associated with project-related construction traffic on local roadways. Traffic noise from daily trips by construction workers commuting to the project site would contribute to the existing traffic noise levels along access routes, potentially increasing traffic noise levels. Construction-generated vehicle traffic would include a mix of light-duty automobiles and trucks and heavy-duty trucks (i.e., 475 workers, 65 vendor trucks and 52 haul trucks). Due to the remote location of the site, workers will be encouraged to carpool to the site under a Construction Traffic Control Plan required under traffic Mitigation Measure MM 4.15-1, in Section 4.15 Traffic and Transportation. Therefore, a carpool factor of 1.25 (i.e., 1.25 persons per vehicle) has been applied to the number of workers for the solar generation site and the gen-tie line in the Project TIA (Dudek, 2019). Onsite and delivery truck traffic to and from the site would be evenly distributed over the 10-hour construction workday, for a conservative analysis. Peak project construction would generate 1,074 daily trips, including 412 AM peak hour trips (396 inbound and 16 outbound), and 412 PM peak hour trips (16 inbound and 396 outbound). With the application of Passenger Car Equivalent (PCE) factors to truck trips, the proposed project would generate 1,702 PCE daily trips, and 476 PCE trips during the AM peak hour (428 inbound and 48 outbound) and 476 PCE trips during the PM peak hour (48 inbound and 476 outbound). The gen-tie would generate 122 daily trips, including 52 AM peak hour trips (50 inbound and 2 outbound), and 52 PM peak hour trips (2 inbound and 50 outbound). With the application of PCE factors to truck trips, the proposed project would generate 174 PCE daily trips, and 60 PCE trips during the AM peak hour (54 inbound and 6 outbound) and 60 PCE trips during the PM peak hour (6 inbound and 54 outbound) (Dudek, 2019).

To experience a perceptible increase (i.e., 3 dBA) in traffic noise levels, vehicle traffic would have to double due to project construction traffic. A 5 dBA increase is typically considered a substantial traffic noise increase. Local roadway access to the proposed project is provided to the project site via Lone Butte Road off SR-58, and access to the gen-tie route is provided via Purdy Avenue off SR-14. Project construction traffic would not double existing traffic on project roadways, except on Lone Butte Road south of SR-58, where the average daily traffic (ADT) would increase from 62 to 913 ADT during daytime project construction, and on Lone Butte Road north of Trotter Avenue, which would increase from 765 to 1,616 ADT. Therefore, project's construction traffic could potentially result in a substantial increase in average daily traffic noise levels along these segments of Lone Butte Road. However, the peak hour traffic noise level is estimated at approximately 64.9 dBA L_{eq} based on a trip distribution of 50 percent to the north and south segments of Lone Butte Road, respectively, which would occur only during the 10-hour daytime construction workday. All other roadway segments analyzed in the project TIA would not experience a doubling in traffic volumes compared to existing conditions during construction; thus, the noise level increases along other roadway segments during construction would be less than the noise level increase on Lone Butte Road south of SR-58 and Lone Butte Road north of Trotter Avenue (Dudek, 2019). Therefore, over 24 hours (including 14 hours of no construction traffic during the evening and night hours), the CNEL on the analyzed roadway segments during construction would not exceed County's average daily noise level of 65 dBA CNEL. In addition, there are no residences on the north segment of Lone Butte Road, and several scattered rural residences on the south segment of Lone Butte Road. Therefore, overall short-term construction-related traffic noise impacts associated with worker commute and equipment transport to and around the project site would be less than significant.

Project Site Construction

Construction of the Sanborn Solar facility would generate noise that could expose nearby receptors to elevated noise levels. Most of the construction activities associated with the proposed project would occur over the entire project site, and would be intermittent and sporadic. Normally, construction activities occur in small construction zones with noise emanating from the various points. Noise levels would be attenuated as construction activity moves further away from receptors due to distance divergence factors.

The project would generate noise during construction using construction equipment, such as a crane, excavator, grader, roller, scraper, tractor/loader/backhoe, trencher, and trucks. Typical maximum (L_{max}) and average (L_{eq}) noise levels generated by individual pieces of construction equipment for each construction phase are summarized in **Table 4.13-7, Estimated Construction Equipment Noise Levels**.

TABLE 4.13-7: ESTIMATED CONSTRUCTION EQUIPMENT NOISE LEVELS

Type of Equipment	Individual Equipment Noise Levels (dBA) @ 50 Feet ^a	
	L_{max}	L_{eq}
Mobilization		
Forklifts	83	79
Generator Sets	81	78
Graders, Scrapers	85	81
Off-Highway Trucks	77	73
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Rollers	85	78
Dozers	82	78
Tractor/Loader/Backhoe	80	76
Trenchers ^b	85	80
Generation Tie (Gen-tie) Line Construction		
Aerial Lift	75	68
Cranes		
Crawler Tractors	82	78
Forklifts	83	79
Generator Sets	81	78
Off-Highway Trucks	77	73
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Tractor/Loader/Backhoe	80	76

TABLE 4.13-7: ESTIMATED CONSTRUCTION EQUIPMENT NOISE LEVELS

Type of Equipment	Individual Equipment Noise Levels (dBA) @ 50 Feet ^a	
	L _{max}	L _{eq}
Building Construction		
Crane	85	77
Forklifts	83	79
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Tractor/Loader/Backhoe	80	76
Grader	85	81
Off-Highway Truck	77	73
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Rollers	85	78
Dozer	82	78
Scraper	85	81
Tractor/Loader/Backhoe	80	76
Solar Array Battery, Unmanned Buildings, Substation & Transmission Line Installation		
Forklifts	83	79
Pneumatic Tools	85	82
Compressors	78	74
Generator Set	81	78
Off-Highway Truck	77	73
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Rollers	85	78
Skid Steers ^b	78	73
Tractor/Loader/Backhoe	80	76
Trencher ^b	85	80
Track-Mounted Post Drivers ^b	88	82
Tractor/Loader/Backhoe	80	76
Warning Horn/Batch Drop	83	70

^a Based on estimated major noise-generating construction equipment. Not all equipment may be represented.

^b Based on file measurement data obtained from a similar project.

SOURCE: FHWA 2011.

As shown in Table 4.13-7, at a reference distance of 50 feet, project construction equipment would generate maximum and hourly average noise levels ranging from approximately 88 to 75 dBA L_{max} and 82 to 68 dBA L_{eq}, respectively. Therefore, the highest maximum and average noise levels of the proposed construction

equipment is estimated at approximately 88 dBA L_{max} and 82 dBA L_{eq} , respectively at a reference distance of 50 feet. For multiple pieces of equipment with similar sound level generation, combined noise levels associated with typical construction activities can reach levels of up to approximately 84 dBA L_{eq} at 50 feet (USEPA, 1971).

Sound attenuates with distances at a rate of 7.5 dBA per a doubling of distance over soft surfaces, such as the flat desert plain in the project area, therefore, the highest hourly average noise level of 82 dBA L_{eq} at 50 feet would attenuate with the distances to the nearest residences. As shown in Figure 4.13-2, there are four rural residences in proximity to the project's northern site to the north and east, with one (#1) whose property line is as close as within approximately 58 feet of the project site boundary potential construction activities at the boundary. As shown in Figure 4.13-3, there are eight rural residences within approximately 1,500 feet of the project's southern site to the east and west, with one (#9) whose property line is as close as within approximately 65 feet of the project site boundary, and therefore, within 65 feet of potential construction activities at the boundary. Average hourly construction noise levels during grading and other typical construction activities ranging up to 84 dBA L_{eq} at 50 feet from the construction activity.

Kern County Code of Ordinances, Chapter 8.36 (Noise Control) includes established hours of construction and limitations on construction related noise impacts on adjacent sensitive receptors. Noise producing construction activities are prohibited between the hours of 9 p.m. and 6 a.m. on weekdays and 9 p.m. and 8 a.m. on weekends, when they are audible to a person with average hearing ability at a distance of 150 feet from the construction site, or if the construction site is within 1,000 feet of an occupied residential dwelling. Certain limited construction activities on an infrequent basis could take place outside these time periods for portions of the proposed project where technical requirements dictate, such as during completion of a continuous pour of concrete for the O&M building floor. Given the fact that construction activities could generate noise greater than the standard 65dB(a) for the Kern County General Plan and Mojave Specific Plan and 55 dB(A) for short period of times, temporary construction impacts are considered significant and unavoidable. Implementation of Mitigation Measures MM 4.13-1 and MM 4.13-2 below are designed to reduce impacts to the extent feasible during construction activities.

Gen-Tie Construction

Construction of the gen-tie transmission line would involve clearing and grubbing of the existing vegetation at the pole locations; grading for construction of dirt access roads, where necessary, and for transmission pole foundations; and stringing of the transmission cable. Clearing of vegetation at a proposed pole location, and the construction of a foundation for the pole, would require approximately 2–3 construction days, with the erection of the pole requiring approximately one day. Access road construction to selected pole locations would require 1 to 2 days, as distance from existing roads would be very limited. Finally, stringing of the transmission line for any given gen-tie segment would likely occur in a single day. Compiled together, the construction activity for the gen-tie development would account for between approximately 4–6 days associated with any given pole location. Depending upon the average pole separation distance, any given residence might fall within 1,000 feet of active construction for only 4–6 days out of the total gen-tie construction period, where the proposed alignment is within 1,000 feet of residences.

The closest residences to the gen-tie alignment are a minimum of 1,195 feet. The Kern County Code of Ordinances would therefore not restrict the construction schedule for the gen-tie lines. As shown in Table 4.13-7, the average noise levels at 50 feet for typical equipment used in this type of project would range up to 89 dBA L_{max} , based upon the loudest two to three pieces of equipment being used (FHWA, 2011). This noise level would diminish to approximately 55 dBA L_{max} at 1,195 feet from the gen-tie construction alignment, which would likely not be readily noticeable over daytime ambient levels. Construction activities

for the gen-tie line at night are considered unlikely, for safety reasons. Consequently, even though construction of the gen-tie lines would not be subject to County noise ordinances, it is not likely that construction would result in significant nuisance noise impacts at the closest sensitive receptors to the alignment. Impacts would be less than significant as it related to construction of the gen-tie transmission line.

Operation

Project Site Operation

Onsite noise sources associated with the project would include pad-mounted inverters and transformers, substation transformers, HVAC equipment for the O&M building, and components of the energy storage system, including inverters, transformers, and HVAC units. The inverter and transformer pads would be distributed throughout the site among the PV modules, and the energy storage and substation area would be located in the northwestern corner of the northern site of the project. An alternate site for the energy storage and substation area would be located in the southeastern corner of the northern site of the Project.

Based on Policy 1 of the Noise Element of the County General Plan and Policy 8.2.4 of the Mojave Specific Plan, impacts relating to operational noise are considered significant when proposed project-related commercial or industrial noise would result in exposure of noise-sensitive land uses to noise levels exceeding 65 dBA L_{dn} (or CNEL). Figures 4.13-2 and 4.13-3 depict the noise-sensitive land uses in the immediate project vicinity and also identifies the locations selected for modeling of operational noise levels from onsite operations.

The resulting project operational noise level at each receptor was modeled based upon the published sound level for each piece of equipment, standard outdoor distance attenuation rates for point sources and hard-site conditions (most conservative) applied to the distance between each equipment location and the receiver, and the logarithmic sum of individual noise levels at the given receptor. Because of the distance between the northern site and southern site, only the equipment proposed to be located within each site was used for the noise-level calculations addressing the receptors adjacent to that site. However, because the major noise sources would be associated with the substation and energy storage systems, these noise sources were included in the noise level evaluation at every receptor location. **Table 4.13-8, *Project Components/Equipment Modeled at Each Sensitive Receptor***, summarizes the project components/equipment included in the assessment of total operational project noise levels at each receptor location. The receptor locations are depicted on Figures 4.13-2 and 4.13-3.

The noise levels from all the noted equipment were combined and calculated at each of the receptor locations, assuming no shielding would be present (i.e., an absence of structures, barriers, or berms between the equipment locations and the receptor locations). The O&M building, energy storage components, and inverters would each provide some shielding between certain equipment noise sources and selected receptors, but this shielding effect was ignored to provide a conservative assessment of total operational noise levels at each receptor. Noise levels were calculated both for the proposed location of the substation, energy storage system, and O&M building (at the northwest corner of the northern site) and for the alternate location of the substation, energy system, and O&M building (at the southeast corner of the northern site).

TABLE 4.13-8: PROJECT COMPONENTS/EQUIPMENT MODELED AT EACH SENSITIVE RECEPTOR

Receptor ID #	Transformers/ Inverters	Energy Storage System: (HVAC, Inverters, Transformers)	Substation / O&M HVAC and Transformers
Proposed Location for Substation, Energy Storage System, O&M Building			
1, 2, 3, 4	45 apiece (northern site)	50 HVAC, 50 inverters, 50 transformers northwest corner of northern site	1 HVAC, 2 transformers northwest corner of northern site
5, 6, 7, 8, 9, 10, 11, 12	34 apiece (southern site)	50 HVAC, 50 inverters, 50 transformers northwest corner of northern site	1 HVAC, 2 transformers northwest corner of northern site
Alternate Location for Substation, Energy Storage System, O&M Building			
1, 2, 3, 4	45 apiece (northern site)	50 HVAC, 50 inverters, 50 transformers southeast corner of northern site	1 HVAC, 2 transformers southeast corner of northern site
5, 6, 7, 8, 9, 10, 11, 12	34 apiece (southern site)	50 HVAC, 50 inverters, 50 transformers southeast corner of northern site	1 HVAC, 2 transformers southeast corner of northern site
NOTES:			
Receptor ID # location shown on Figures 4.13-2 and 4.13-3.			
O&M = operations and maintenance; HVAC = heating, ventilation, and air conditioning			

The results of the operation noise analysis are presented in **Table 4.13-9, Project Operational Noise Level Summary for Existing Sensitive Receptors**. The one-hour average sound levels would range up to approximately 49 dBA L_{eq} at the worst-case receptor (Receptor ID No. 4, as shown on Figure 4.13-2). This would be the highest combined operational level for all equipment at any receptor location, and this receptor location would experience the same noise level under either of the alternative sites considered for the substation, energy storage system, and O&M building. Overall operational noise levels would range from 37 to 49 dBA L_{eq} at existing sensitive noise receptors in the project vicinity, as shown in Table 4.13-9.

Assuming operation of all equipment simultaneously at the project site, the values illustrated in Table 4.13-10 would represent the hourly average noise levels for project operation at each receptor. Solar panel inverters and transformers would only operate during daylight hours and would not generate noise after dark. However, inverters and transformers for the energy storage system could operate after dark. Using a worst-case scenario that is unrealistic for anticipated operating characteristics, noise levels for 24-hour continuous operation were calculated. If all of the equipment were to run continuously for 24-hours, the noise level at the worst-case receptor (Receptor ID No. 4) would result in a CNEL of 56 dBA (L_{dn} of 55 dBA). Thus, even using a continuous 24-hour full operations schedule, the project would not have the potential to expose noise-sensitive receptors to noise levels above 65 dBA CNEL.

According to the 24-hour measurements conducted at LT1 and LT2, hourly average L_{eq} ambient noise levels ranged from 38 dBA to 64 dBA at LT1 and from 38 dBA to 61 dBA at LT2. The calculated 24-hour noise level for ambient conditions was 65 dBA CNEL at LT1 and 63 dBA CNEL at LT2. Consequently, project operational noise level of 56 dBA CNEL (worst-case receptor, and unrealistic worst-case 24-hour operations) would be well below the existing ambient noise levels in the project area. Consequently, operations on the project site would not have the potential to create an operational noise level of 65 dBA CNEL or to increase ambient noise levels greater than 5 dBA above ambient.

TABLE 4.13-9: PROJECT OPERATIONAL NOISE LEVEL SUMMARY FOR EXISTING SENSITIVE RECEPTORS

Receptor ID	Noise Level Proposed Location Substation, O&M, and Energy Storage Facility (dBA L_{eq})	Noise Level Alternate Location Substation, O&M, and Energy Storage Facility (dBA L_{eq})
1	48	44
2	44	41
3	44	45
4	49	49
5	39	42
6	39	42
7	40	42
8	40	41
9	41	42
10	37	38
11	37	39
12	38	40

NOTES:

Receptor ID # location shown on Figures 4.13-2 and 4.13-3. O&M = operations and maintenance; dBA = A-weighted decibel; L_{eq} = equivalent sound level over a given period

The operation of the Sanborn Solar Facility would not be anticipated to generate noise levels which exceed County or Specific Plan Standards, nor which would cause a substantial increase in ambient noise levels compared to existing conditions. Therefore, mitigation would not be required for onsite project operational noise.

Gen-Tie Operation

Operation of the gen-tie transmission lines would have little potential for the generation of substantial noise. However, transmission lines are subject to a phenomena called “Corona discharge noise.” Corona discharge results from the partial breakdown of the electrical insulating properties of the air surrounding electricity conductors. When the intensity of the electric field at the surface of the conductor exceeds the insulating strength of the surrounding air, a corona discharge occurs at the conductor surface, representing a small dissipation of heat and energy. Some of the energy may dissipate in the form of small local pressure changes that result in audible noise or in radio or television interference. Audible noise generated by corona discharge is characterized as a hissing or crackling sound that may be accompanied by a hum.

Slight irregularities or water droplets on the conductor and/or insulator surface accentuate the electric field strength near the conductor surface, making corona discharge and the associated audible noise more likely. Therefore, audible noise from transmission lines is generally a foul weather (wet conductor) phenomenon. Based on precipitation data from the Western Regional Climate Center, the Mojave region receives approximately 6.7 inches of precipitation a year, with daily highs of less than 0.10 inches per day (WRCC, 2017). Because the number of days and amount of precipitation per year would be minimal, corona events would be rare and intermittent.

Nonetheless, to dismiss the potential significance of corona noise, research was conducted to determine the sound level associated with this phenomenon. Veneklasen Associates conducted noise measurements of a 500-kV double-circuit transmission line. Since corona noise is relative to the capacity of the transmission line, the noise levels from a 500-kV line would be greater than for the project's 230-kV transmission line. Veneklasen conducted noise measurements on a 15-minute average for a 500-kV double-circuit transmission line near Serrano Substation in Anaheim Hills, when humidity was greater than 80%, and temperatures were in the range of 60°F (conditions contributing to high corona noise). Directly under the transmission line tower, the measured level of corona noise, when ideal conditions existed for this phenomenon to occur, were 46 dBA (Dudek, 2007). Beyond 100 feet of the transmission line, the corona noise level drops at a rate of approximately 4 dB for each doubling of the distance. At a distance of approximately 1,200 feet from the transmission line (the closest residence, refer to Figure 4.13-3), the corona discharge noise level would be approximately 33 dBA, which is lower than the existing ambient noise levels in the project area. Consequently, corona noise would not have the potential to create an operational noise level of 65 dBA CNEL, or to increase noise levels greater than 5 dBA above ambient.

The project would install polymer (silicon rubber) insulators on any new gen-tie transmission line connections. This material is hydrophobic (repels water) and minimizes the accumulation of surface contaminants such as soot and dirt, which in turn reduces the potential for corona noise to be generated at the insulators. With consideration of these standard practices, noise from coronal discharge would not represent a substantial increase in noise levels in the project vicinity. Onsite operational noise calculation worksheets are provided in the Noise Technical Report in Appendix J.

The proposed gen-tie transmission line operation would also not be anticipated to generate noise levels which exceed County or Specific Plan Standards, nor which would cause a substantial increase in ambient noise levels compared to existing conditions. Therefore, mitigation would not be required for gen-tie operational noise.

Project Decommissioning

Activities associated with a potential decommissioning of the project would result in similar or lower noise levels than those that would be experienced under the loudest phases of construction. Therefore, decommissioning activity noise levels could result in disturbances of noise-sensitive receptors in the project vicinity similar to those during the loudest construction phases, if activities are not restricted to daytime hours. Thus, similar to construction, impacts during decommissioning of the project are considered significant and unavoidable. Mitigation Measures MM 4.13-1 and MM 4.13-3 would similarly be implemented during decommissioning activities.

Mitigation Measures

MM 4.13-1: The following measures are to be implemented to further reduce short-term noise levels associated with project construction and decommissioning:

- a. Equipment staging shall be located in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during construction to the extent practical. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, where feasible. Equipment staging shall be located in areas that will create the greatest distance between construction-related noise

sources and noise-sensitive receptors nearest the project site during construction to the extent practical. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, where feasible.

- b. Construction equipment shall be fitted with noise-reduction features such as mufflers and engine shrouds that are no less effective than those originally installed by the manufacturer.
- c. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9 p.m. to 6 a.m. on weekdays, and between 9 p.m. to 8 a.m. on weekends. These hourly limitations shall not apply to activities where hourly limitations would result in increased safety risk to workers or the public, such as commissioning and maintenance activities that must occur after dark to ensure photovoltaic arrays are not energized, unanticipated emergencies requiring immediate attention, or security patrols.
- d. Haul trucks shall not be allowed to idle for periods greater than five minutes, except as needed to perform a specified function (e.g., concrete mixing).
- e. Onsite vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency).
- f. Back-up beepers for all construction equipment and vehicles shall be broadband sound alarms or adjusted to the lowest noise levels possible, provided that the Occupational Safety and Health Administration and California Division of Occupational Safety and Health's safety requirements are not violated. On vehicles where back-up beepers are not available, alternative safety measures such as escorts and spotters shall be employed.

MM 4.13-2: The construction contractor shall establish a Noise Disturbance Coordinator for the project during construction. The Noise Disturbance Coordinator shall be responsible for responding to any complaints about construction noise. The Noise Disturbance Coordinator shall determine the cause of the complaint and shall be required to implement reasonable measures to resolve the complaint. Contact information for the Noise Disturbance Coordinator shall be submitted to the Kern County Planning and Natural Resources Department prior to commencement of any ground disturbing activities.

MM 4.13-3: Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.), the project proponent/operator shall provide written notice to the public through mailing a notice, which shall include:

- 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 and a telephone number and email address where complaints and questions can be registered with the noise disturbance coordinator.
- 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.

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.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.13-1 and MM 4.13-3, temporary impacts associated with construction and decommissioning activities would be considered significant and unavoidable. Operational impacts would be less than significant.

Impact 4.13-2: The project would expose persons to or generate excessive ground borne vibration or ground borne noise levels.

In addition to noise, groundborne vibration and groundborne noise would be generated by Project construction activities. Vibrations from construction activities do not often reach the levels that can damage structures or affect activities that are not vibration-sensitive, although the vibrations may be felt by nearby persons in close proximity and result in annoyance (FTA, 2018). As shown in Figures 4.13-2 and 4.13-3, residences are located in proximity to project construction, and construction activities would occur as close as approximately 200 feet from the property line of the closest residential structure (i.e., the residential property line is as close as approximately 58 feet of the project site boundary; however, due to large lot size, the actual structure is approximately 200 feet away from the project site boundary, and potential construction activities).

The proposed project would not involve the long-term operational use of any equipment or processes that would result in potentially significant levels of ground vibration. Construction would be temporary and only occur near these residences at the closest point for no more than a few days (likely 5 days maximum) and during daylight hours. However, short-term construction activities associated with the proposed project may cause an increase in groundborne vibration levels. Vibration levels typically associated with construction equipment are summarized in **Table 4.13-10, Representative Vibration Source Levels for Construction Equipment**.

TABLE 4.13-10: REPRESENTATIVE VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Peak Particle Velocity at 25 Feet (in/sec)
Vibratory Roller	0.210
Post Driver ^a	0.200
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Small Bulldozers	0.003

^a Calculated based on a reference level of 0.65 in/sec PPV for a 36,000 foot-pound (ft-lbs) pile driver and a maximum energy level of 2,200 ft-lbs for post drivers.

SOURCE: FTA, 2006.

As noted above in Table 4.13-10, groundborne vibration levels generated by construction equipment would be as high as approximately 0.210 in/sec PPV or less, at a reference distance of 25 feet. However, these levels would decrease significantly with increased distance from the source; assuming a maximum level of 0.21 in/sec PPV, groundborne vibration levels would decrease to approximately 0.05 in/sec PPV at approximately 75 feet. Therefore, groundborne vibration levels at the nearest residential structures, which are located in excess of 75 feet from the project site, would not exceed applicable thresholds for structural damage or human annoyance (i.e., 0.25 and 0.1 in/sec PPV, respectively).

For this analysis it is assumed that pile driving activities would not occur closer than approximately 175 feet from the nearest sensitive receptor. Other construction activities are less intensive than pile driving and would have lower PPV. Therefore, vibration levels from pile driving are considered worst-case for the solar facility construction. Caltrans vibration guidance provides the following equation to calculate PPV at sensitive receptors, such as residences:

$$\text{PPV Impact Pile Driver} = \text{PPV}_{\text{Ref}} (25/D)^n \text{ (in/sec)}$$

Where:

PPV_{Ref} = 0.65 in/sec for a reference pile driver at 25 feet.

D = distance from pile driver to the receiver in feet.

n = 1.1 is a value related to the vibration attenuation rate through ground

Using the referenced formula and an assumed 1,212 ft-lb rated energy for the impact pile driver, the calculated PPV at the nearest residence (approximately 175 feet) would be approximately 0.08 in/sec PPV, which according to the Caltrans guidance would not damage buildings and would be less than strongly perceptible.

Furthermore, because construction activities would be limited to the daytime hours, increased levels of annoyance and sleep disruption to occupants of nearby residential dwellings would be further diminished. Therefore, groundborne vibration impacts resulting from project construction would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.13-3: The project would create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Once constructed, the proposed project would operate continuously, seven days per week. Noise generated by project operations would be predominantly associated with the onsite operation of transformers, inverters, substations, and power conversion stations. Corona discharge may also be potentially detectable in the immediate vicinity of the proposed transmission lines, more often during high humidity conditions.

Additional operational noise sources associated with the proposed project would include onsite vehicle operations and intermittent maintenance activities.

As discussed in Section 4.13-1 and shown in Table 4.13-9, project operation would generate noise levels ranging from 37 to 49 dBA L_{eq} at the noise-sensitive receptors, approximately at or below the measured ambient noise levels (not adjacent to roadways) of 34 to 52 dBA L_{eq} shown in Table 4.13-3, which, when added to the ambient, would result in approximately a 0 to 3 dBA increase over the ambient without the project.

Solar panel inverters and transformers would only operate during daylight hours and would not generate noise after dark. However, inverters and transformers for the energy storage system could operate after dark. Using a worst-case unrealistic scenario, if all of the equipment were to run continuously for 24-hours, the noise level at the worst-case receptor (Receptor ID No. 4) would result in a CNEL of 56 dBA (L_{dn} of 55 dBA). Using the 24-hour measurements conducted at LT1 and LT2, the calculated 24-hour noise level for ambient conditions was 65 dBA CNEL at LT1 and 63 dBA CNEL at LT2, which are higher than the project site operational noise level. Consequently, operations on the project site would not have the potential to increase ambient noise levels greater than 5 dBA above ambient.

At a distance of approximately 1,200 feet from the transmission line (the closest residence, refer to Figure 4.13-3), the corona discharge noise level would be approximately 33 dBA, which is lower than the existing ambient noise levels in the project area. Consequently, corona noise would not have the potential to create an operational noise level of 65 dBA CNEL, or to increase noise levels greater than 5 dBA above ambient.

Therefore, project operation would not cause the ambient noise level measured at the property line of affected uses to increase by 5 dBA or greater. Therefore, the project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, and impacts are less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Construction

A list of cumulative projects within a 1-mile and 6-mile radius of the project site was provided by Kern County and are listed in Table 3-5 and shown in Figure 3-16. The cumulative projects are projects that are proposed and in the review process, but not yet fully approved; or, projects that have been approved, but not fully constructed or occupied. Based on review of the project characteristics, status, and location in proximity to the project site, three cumulative projects were identified that would likely add construction traffic noise to the study area roadway segments and potentially generate construction noise in proximity to the project site: Mojave Mobile Home, Service Rock Products Concrete Batch Plant, and Edwards AFB Gen-Tie Line Construction, as detailed in the Project TIA (Dudek, 2019).

Construction Traffic

As previously discussed under Impact 4.13-1, project construction traffic would not double existing traffic on project roadways (less than a perceptible traffic noise increase), except on Lone Butte Road south of SR-58, where the traffic would increase from 62 to 913 ADT, and on Lone Butte Road north of Trotter Avenue, which would increase from 765 to 1,616 ADT (Dudek, 2109), potentially resulting in a substantial increase in average daily traffic noise levels along these segments of Lone Butte Road. Peak project construction would generate 1,074 daily trips, including 412 AM peak hour trips (396 inbound and 16 outbound), and 412 PM peak hour trips (16 inbound and 396 outbound). The peak hour traffic noise level was estimated at approximately 64.9 dBA L_{eq} based on a construction trip distribution of 50 percent to the north and south segments of Lone Butte Road, respectively (Dudek, 2019). Therefore, over 24 hours (including 14 hours of no construction traffic during the evening and night hours), the CNEL on the analyzed roadway segments during construction would not exceed County's average daily noise level of 65 dBA CNEL. Therefore, overall short-term construction-related traffic noise impacts associated with worker commute and equipment transport to and around the project site would be less than significant.

Project construction combined with cumulative project construction would increase existing traffic to 919 ADT on Lone Butte Road south of SR-58 (an increase of only 8 ADT due to cumulative projects), and to 2,169 ADT on Lone Butte Road north of Trotter Avenue (an increase of 553 ADT) with 125 AM peak hour trips (Dudek, 2109). The peak hour traffic noise level was estimated at approximately 66.6 dBA L_{eq} . However, over 24 hours (including 14 hours of no project or cumulative construction traffic during the evening and night hours), the CNEL on the analyzed roadway segments during construction would not exceed County's average daily noise level of 65 dBA CNEL. Therefore, cumulative short-term construction-related traffic noise impacts associated with worker commute and equipment transport to and around the project site would not result in a significant cumulative construction noise impact.

Construction

Construction noise impacts are localized in nature because they are limited to the construction site where construction equipment is operating. As previously discussed, sound levels from typical construction equipment range from 74 dBA to 89 dBA L_{eq} at 50 feet from the source (FHWA 2011). Construction noise would decrease approximately 6 dBA (hard-site conditions) with every doubling of distance. Therefore, construction noise would be reduced to less than 60 dBA approximately 0.25 miles from the construction site, assuming worst-case construction noise of 89 dBA L_{eq} , hard-site conditions, and no intervening topography or structures. Additionally, construction noise is temporary and would cease at completion of each of the projects within the cumulative project "area of influence". Consequently, only construction projects occurring simultaneously within 0.25 miles of each other could result in a significant cumulative construction noise impact.

As shown on Figure 3-16, the closest project is located greater than approximately 0.25 miles from the project site. Therefore, construction of the proposed Sanborn Solar facility and gen-tie transmission lines would not be located in close proximity to another construction project(s). As a result, while construction of the project would result in significant and unavoidable impacts, these impacts would not have a cumulatively considerable contribution at near-by residences due to the distance of cumulative projects in proximity to the project site. Furthermore, cumulative projects would also be subject to noise standards defined in the applicable ordinance including time of day standards for construction activities, including obtaining a noise variance for certain limited and infrequent construction activities occurring outside of the

allowable hours. Therefore, when considered with other past, present, and reasonably foreseeable future projects, the proposed project would not result in a cumulatively considerable contribution to construction noise impacts in excess of applicable standards.

Vibration

Cumulative construction projects may also result in the exposure of people to or the generation of excessive groundborne vibration. The same receptor as identified for construction noise would be the closest to be impacted by all projects with respect to construction-related vibration as well. Due to these distances, and the rapid attenuation of groundborne vibration, the project and the nearest related project are not in close enough proximity to this sensitive receptor such that it would be exposed to substantial groundborne vibration levels. Construction of the gen-tie line, and decommissioning activities would result in similar noise and vibration levels identified for the construction of the proposed project. Therefore, cumulative impact in terms of groundborne vibration would be less than significant.

Operation

With respect to operational noise, the nearest cumulative project is approximately 1 mile. Given the distance of the nearest sensitive receptor to the nearest cumulative project, cumulative impacts associated with operational noise from both facilities are anticipated to be negligible. During operation, the gen-tie would not generate noise beyond the existing baseline environment. Thus, cumulative operational noise impacts would be less than significant.

Cumulative operation could also result in the exposure of people to or the generation of excessive groundborne vibration. However, since operation of the proposed project and related projects would involve operational traffic, including O&M staff and regular maintenance truck (0.076 in/sec PPV), and panel washing activity (not measurable), project-related vibration impacts would not have any measurable effect on the adjacent offsite sensitive receivers. Therefore, cumulative vibrational impacts would be less than significant.

Overall, when considered with other past, present, and reasonably foreseeable future projects, the proposed project would not result in a cumulatively considerable contribution to noise impacts.

Mitigation Measures

Implementation of Mitigation Measures MM 4.13-1 and MM 4.13-3 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.13-1 and MM 4.13-3, cumulative impacts would be less than significant.

4.14.1 Introduction

This section of the EIR describes the affected environment and regulatory setting pertaining to public services, which include fire and police protection. This section also addresses the potential impacts on public services that would result from implementation of the project and the mitigation measures to reduce these potential impacts. Information for this section was taken from numerous sources, including websites, and service agency plans.

The Notice of Preparation/Initial Study (NOP/IS), presented in Appendix A of this EIR, determined that due to the nature of the proposed project, other public services (schools, parks, and other public facilities) would not be impacted by the project; therefore, these services are not addressed in this section.

4.14.2 Environmental Setting

Fire Protection

The Kern County Fire Department (KCFD) provides primary fire protection services, fire prevention, emergency medical, and rescue services to more than 800,000 people in unincorporated areas of Kern County and nine incorporated cities. KCFD operates 47 full-time fire stations within 7 battalions and is equipped with 55 fire engines, 4 ladder trucks, 41 patrol vehicles, 25 command vehicles, 21 reserve engines and patrols, 6 dozers, 2 helicopters, 2 hazardous material response teams, and other ancillary vehicles and equipment. KCFD is staffed with 625 permanent employees, which includes 546 uniformed firefighters (KCFD, 2019a). KCFD has experienced several budget and staffing cuts in recent years and was operating on a 7.5-million-dollar deficit going into the 2018–2019 fiscal year (Barnwell, 2018).

The proposed project consists of two discontinuous sites, north site and south site, each of which would contain solar and energy storage facilities, which together would comprise the project site. The project site is located within Battalion 1, Central Mountains/Desert, which serves the southeastern portion of Kern County and is divided by State Route (SR) 58 that runs east/west and by SR-14 that runs north/south. Battalion 1 consists of eight stations (KCFD, 2011) and covers 951,600 acres of which 351,276 acres is State Responsibility Area (SRA) land area, which the California Department of Forestry and Fire Protection (CAL FIRE) has a legal responsibility to provide fire protection for this SRA land area. The SRA land area is bounded by the Mojave Desert on the east, the Tehachapi Mountains in the center, and the Central Valley to the west (KCFD, 2009). As shown in **Figure 4.18-2, Fire Hazard Severity Zones for State Responsibility Areas**, located in Section 4.18, *Wildfire*, of this EIR, the project site is not within a SRA; however, the surrounding area is categorized as SRA Moderate and the project site is within an unincorporated Local Responsibility Area (LRA) (CAL FIRE, 2007a). According to the CAL FIRE, Fire Hazard Zones in LRA Map, the project site is within a LRA Moderate fire hazard severity zone, as shown in **Figure 4.18-1, Fire Hazard Severity Zones for Local Responsibility Areas**, located in Section 4.18, *Wildfire*, of this EIR (CAL FIRE, 2007b).

Fire Station No. 14 (Mojave), located at 1953 SR-58, is approximately 1.8 miles to the northwest of the project site and would be the primary responder to a fire or emergency at the project site. In the event of a major fire or when short-staffed, other stations would be called on to respond, as necessary, including Fire Station No. 15 (Rosamond), located at 35th Street West, Fire Station No. 12 (Tehachapi), located at 800 South Curry Street, and Fire Station No. 13 (Tehachapi), located at 21415 Reeves Street. Information on the three closest fire stations to the project site is included in **Table 4.14-1, *List of Nearby Fire Stations***. The table identifies each type of facility, the name and address of the facility, and the approximate distance from the project site. In remote County areas like the project site, the average response time is approximately 21 minutes (CPSM, 2017).

TABLE 4.14-1: LIST OF NEARBY FIRE STATIONS

Agency	Facility	Address	Approximate Distance from Project Site
KCFD	Fire Station No. 14	1953 SR-58 Mojave, CA 93560	1.8 miles northwest of the northern project site
KCFD	Fire Station No. 15	3219 35th Street West Rosamond, CA 93560	10.3 miles southwest of the southern project site
KCFD	Fire Station No. 12	800 South Curry Street Tehachapi, CA 93561	20.4 miles northwest of northern project site
KCFD	Fire Station No. 13	21415 Reeves Street Tehachapi, CA 93561	22.1 miles northwest of northern project site

Kern County has 14 mutual-aid agreements with neighboring fire suppression organizations to further strengthen the emergency services (KCFD, 2018a). The KFCFS has a mutual aid agreement with the Los Angeles County Fire Department (LACFD) in the event that KCFD is unable to be the primary responder to an emergency. The LACFD has 174 fire stations throughout Los Angeles County. The LACFD is divided into 22 battalions with over 4,000 personnel (LACFD, 2017; LACFD, 2019). The nearest LACFD fire station to the project site is Station No. 112, located at 8812 W. Avenue E-8, Lancaster, approximately 31.6 miles southwest of the project site. As previously mentioned, the project site is within an area of moderate fire hazard, as determined by the County (KCFD, 2009) and CAL FIRE (CAL FIRE, 2007).

Kern County applies and utilizes the National Fire Code set forth by the National Fire Protection Association, the California Fire Code, the California Building Code, and the Kern County Ordinance Code to regulate fire safety.

The Kern County Emergency Medical Services Division (EMS) is the lead agency for the emergency medical services system in Kern County and is responsible for coordinating all system participants in the County, which include the public, fire departments, ambulance companies, other emergency service providers, hospitals, and Emergency Medical Technician (EMT) training programs throughout the County. The EMS includes a system of services organized to provide rapid response to serious medical emergencies, including immediate medical care and patient transport to a hospital setting. EMS covers day to day emergencies, disaster medical response planning and preparation, and preventative health care. The department also provides certification and re-certification for EMT's, paramedics, specialized nurses (MICN), and specialized dispatchers (EMD) (County of Kern, 2018). The nearest hospitals are the Antelope Valley Hospital, located at 1600 West Avenue J, in the City of Lancaster, approximately 20 miles to the south and the Tehachapi Hospital, located at 115 West E Street in the City of Tehachapi, approximately 18.5 miles to the northwest.

An inventory of fire facilities in the project area is provided below in Table 4.14-1. The table identifies each type of facility, the name and address of the facility, and the approximate distance from the project site.

Law Enforcement Protection

Kern County Sheriff's Department

The Kern County Sheriff's Office (KCSO) provides basic law enforcement services in the unincorporated areas of the County, which includes the project area. The KCSO enforces local, State, and federal laws and is responsible for crime prevention, field patrol (ground and air), crime investigation, the apprehension of offenders, regulation of noncriminal activity, and related support services such as, patrolling off-highway vehicle recreation areas in the desert and mountainous areas of the County. Traffic and parking control functions are also provided along with some investigation of property damage reports and traffic accidents. Complete investigations are conducted for injury, fatal, intoxication-related, and hit and run accidents.

The KCSO is currently staffed with 1,202 sworn and civilian employees, 567 deputy sheriffs, 338 detention deputy positions, and 297 professional support staff (KCSO, 2019a). The headquarters for the KCSO is located at 1350 Norris Road in the City of Bakersfield. The KCSO consists of 14 substations that provide patrol services (KCSO, 2019b). The nearest substation that would provide service to the project site is the Mojave Substation located approximately 1.5 miles northwest of the northern site at 1771 Highway 58 in the community of Mojave. This substation geographically covers approximately 1320 square miles, making it one of the largest response areas of Kern County substations and provides services to approximately 14,000 residents in the southeastern most end of Kern County (KCSO, 2019c). Other substations in proximity to the project site include Tehachapi Substation and Rosamond Substation. Information on three closest substations to the project site is included in **Table 4.14-2, List of Nearby Sheriff Substations**.

TABLE 4.14-2: LIST OF NEARBY SHERIFF SUBSTATIONS

Agency	Facility	Address	Approximate Distance from Project Site
KCSO	Mojave Substation	1771 State Highway 58 Mojave, CA 93501	1.5 miles northwest of the northern project site
KCSO	Rosamond Substation	3179 35th Street West Rosamond, CA 93560	10.3 miles southwest of the southern project site
KCSO	Tehachapi Substation	22209 Old Town Road Tehachapi, CA 93581	23.3 miles northwest of the northern project site
KCSO	Boron Substation	26949 Cote Street Boron, CA 93516	25.8 miles east of the northern project site

The KCSO strives to respond to calls as quickly as possible. Life-threatening calls that involve a danger to someone's personal safety are given first priority. Response time is defined as the time required to respond to a call for service, measured from the time a call is received until the time a patrol car arrives at the scene. Response times naturally vary depending on the severity of the call, available staff, and location of patrol car. Average response time for the KCSO is 5 minutes or less for an emergency or immediate-response incident (e.g., a crime that is in progress and/or a life-or-death situation) and 8 to 10 minutes for routine calls (e.g., a crime that has already occurred and/or an incident that is not life-threatening). In 2018, the

KCSO reported that the County's fiscal emergencies have impacted and affected staffing and have created a number of shortages in the East Kern area, including Mojave. This could mean potential delays in response times due to a limited budget, and consequently, less staff. (Barnwell, 2018).

Response time to an emergency at or near the project site would vary depending on the level of demand at the substation at the time of the call. If demand is high, the response time would be longer than the average times given above. The response time for a nonemergency call could be eight minutes or more, depending on staffing and the number of other calls for service.

Off-Highway Vehicle Enforcement Team

In 2000, the KCSO created the Off-Highway Vehicle (OHV) Enforcement Team that can be deployed to off road riding areas and adjacent communities in Kern County, as needed. The goal of the OHV Enforcement Team is to provide a safe and secure environment for the OHV community and nearby residents, and to help protect sensitive natural resources. Kern County attracts over 800,000 visitors a year to the local OHV riding areas and approximately 500,000 visitors in east Kern area. The OHV Enforcement Team patrols numerous off road riding areas in Kern County, including a popular riding area near a portion of the Pacific Crest Trail that runs through Rosamond, Mojave, and Tehachapi. The OHV Enforcement Team works closely with officers from the Bureau of Land Management (BLM), California State Parks, and other local law enforcement agencies (KCSO, 2019d).

California Highway Patrol

As a major statewide law enforcement agency, the California Highway Patrol (CHP) is responsible for managing and regulating traffic for the safe, lawful, and efficient use of California highways. The CHP patrols State highways and all County roadways, enforces traffic regulations, responds to traffic accidents, and provides service and assistance to disabled vehicles. The CHP has a mutual aid agreement with KCSO.

The CHP is divided into eight divisions that provide services in areas of California (CHP, 2019a). The project site is within the jurisdiction of the Inland Division, which includes the most intensely-congested roads in the nation at the intersections of Interstates 10, 15, 215, and Highways 60, 71, 91, and 210 (CHP, 2019b). The nearest Inland Division office to the project site is located at 1313 Highway 58, in the community of Mojave, approximately 8.4 miles northeast of the northern project site.

Schools/Parks/Other Facilities

The Kern County Parks and Recreation Department manages 8 regional parks, 25 public buildings, and 40 neighborhood parks. There are no recreational facilities currently serving the project, nor are there existing parks located within 1 mile of the proposed project.

The Kern County Library system consists of 24 branches and 2 bookmobiles throughout Kern County, with the main branch library (the Beale Memorial Library) located in Bakersfield. Materials for use at county branches include books, government documents, computers, CDs, and other informational media. The Kern County library system maintains a collection of 1.15 million books, audiovisual items, periodicals, and other informational sources. The closest libraries to the proposed project are the Mojave Branch Library, located approximately 1.8 miles northwest of the northern project site at 15555 O Street, Mojave, and the Rosamond Branch Library, located approximately 9.1 miles southwest of the southern project site at 3611 Rosamond Boulevard, Rosamond.

The project site is located within the boundaries of the Southern Kern Unified School District, which operates seven schools. The nearest school to the project site is Tropico Middle School, located approximately 10.25 miles southwest of the southern project site, in the community of Rosamond.

4.14.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Fire Code

The 2016 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operation. Chapter 6 (Building Services and Systems) of the Code focuses on building systems and services as they relate to potential safety hazards and when and how they should be installed. Section 608 of the California Building Code includes requirements for battery energy storage systems greater than 20 kWh, which includes the proposed energy storage facilities. Section 608 includes requirements for vehicle impact protection, location, spacing between batteries, egress, security, and fire suppression systems.

Building services and systems are addressed include emergency and standby power systems, electrical equipment, wiring and hazards, and stationary storage battery systems. Chapter 33 (Fire Safety During Construction and Demolition) of the Code outlines general fire safety precautions to maintain required levels of fire protection, limit fire spread, establish the appropriate operation of equipment and promote prompt response to fire emergencies. Features regulated include fire protection systems, fire fighter access to the site and building, means of egress, hazardous materials storage and use and temporary heating equipment and other ignition sources.

California Department of Forestry and Fire Protection (CAL FIRE)

Under Title 14 of the California Code of Regulations (CCR), CAL FIRE has the primary responsibility for implementing wildfire planning and protection for SRAs. CAL FIRE develops regulations and issues fire-safe clearances for land within a fire district of the SRA. More than 31 million acres of California's privately owned wildlands are under CAL FIRE's jurisdiction.

CAL FIRE adopted Fire Hazard Severity Zone maps for SRAs and LRAs in 2007. Fire Hazard is a way to measure the physical fire behavior so that people can predict the damage a fire is likely to cause. Fire hazard measurement includes the speed at which a wildfire moves, the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front. The project site is not

located within a SRA but it is located in an area of moderate fire hazard and within an unincorporated LRA (CAL FIRE, 2007a/2007b).

In addition to wildland fires, CAL FIRE's planning efforts involve responding to other types of emergencies, including medical aids, hazardous material spills, swift-water rescues, search and rescue missions, civil disturbances, train wrecks, floods, and earthquakes. Through contracts with local government, CAL FIRE provides emergency services in 36 of California's 58 counties (CAL FIRE, 2012).

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to public services. The policies, goals, and implementation measures in the Kern County General Plan related to public services that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Chapter 1. Land Use, Conservation and Open Space Element

1.4. Public Facilities and Services

Policies

- Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.
- Policy 6: The County will ensure adequate fire protection to all Kern County residents.
- Policy 7: The County will ensure adequate police protection to all Kern County residents.

Implementation Measures

- Measure B: Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.
- Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

1.10. General Provisions

Goal

- Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving viable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

1.10.1. Public Services and Facilities

Policies

- Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure that it generates and upon which it is dependent.
- Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to ensure the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Chapter 4. Safety Element

4.6. Wildland and Urban Fire

Policies

- Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.
- Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.
- Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.
- Policy 6: All discretionary projects shall comply with the adopted fire code and the requirements of the fire department.

Implementation Measure

- Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Mojave Specific Plan

The policies, goals, and implementation measures in the Mojave Specific Plan for public services that are applicable to the project can be found in Chapter 3, Land Use Element, and are provided below:

The key goal of the Land Use Element is to maintain Mojave as a community that offers diverse residential, employment, and retail opportunities to residents while accommodating growth and providing appropriate levels of urban services. Toward this end, the Specific Plan provides for separation of incompatible uses, conservation of resource lands, and concentration of urban-level uses in areas where infrastructure exists or can easily be provided. (County of Kern, 2003).

Chapter 3. Land Use Element

Objectives

- Objective 3.2: Develop a balanced land use pattern to ensure that future growth provides a range of residential, employment, service, and recreational opportunities.
- Objective 3.6: Ensure that public services and utilities are provided commensurate with established needs and projected growth.

Policies

- Policy 3.6.2: Coordinate with the Mojave Public Utility District, County Sheriff's Department, County Library Department and County Fire Department to ensure sufficient services are provided to community residents and businesses.

Chapter 10. Implementation

Measures

- Measure L-1. Adequate Services: Require applicants to demonstrate the availability of fire, police, emergency response and solid waste disposal services during discretionary environmental review.
- Measure L-2. Fire and Police Protection Implement the following measures to ensure adequate fire and police protection in the Mojave community:
- a) Work with the Kern County Sheriff's Department and Kern County Fire Department to ensure the continuation of an adequate level of services for the Specific Plan Area.
 - b) If additional Fire Department or Sheriff station sites are required, identify sites and require dedication of land for such purposes or payment of proportional share of services as a condition of development.
 - c) Work with local organizations and the County Sheriff and Fire Department to continue administration of the Mojave Desert Community Response Plan.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan was adopted on February 24, 1992, and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Mojave and West Edwards Road Settlement Specific Plans area. The following goals, policies, and implementation measures in the West Edwards Road Settlement Specific Plan for public services are applicable to the proposed project:

Chapter 1.2 Public Facilities and Services

Goal

Goal 1.2.1: To provide adequate public services and facilities to meet current and projected community needs.

Policies

Policy 1.2.3.1: New development shall be required to pay its proportional share of the costs of local infrastructure improvements such as public streets, and water and sewer systems.

Policy 1.2.3.2: Development shall be encouraged to utilize existing utility purveyors.

Implementation Measure

Measure 1.2.4.3: Plans for adequate fire flows and access shall be approved by the Kern County Fire Department prior to issuance of a building permit.

Chapter 4. Safety Element

Policies

Policy 4.1.3.2: New development will be allowed only when it can meet standard levels of service from fire and water service delivery systems.

Implementation Measure

Measure 4.1.4.2: All construction shall comply with the requirements of the Kern County Code of Building Regulations and the Uniform Fire Code (UFC) regarding water supply, fire flow, and construction standards.

Kern County Fire Department Wildland Fire Management Plan

The KCFD Wildland Fire Management Plan adopted in 2009 assesses the wildland fire situation throughout the SRA within the County. The Plan includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan systematically assesses the existing levels of wildland protection services and identifies high-risk and high-value areas, which are potential locations for costly and damaging wildfires. The plan also ranks the areas in terms of priority needs and prescribes what can be done to reduce future costs and losses. The project site is located within a moderate fire hazard severity zone (KCFD, 2009).

Kern County Fire Department Hazards Mitigation Plan

The purpose of the KCFD Hazards Mitigation Plan is to reduce or eliminate long-term risk to people and property from natural hazards and their effects in Kern County. The plan includes specific recommendations for actions that can mitigate future disaster losses, as well as a review of the County's current capabilities to reduce hazards impacts. This multi-jurisdictional plan includes Kern County, and the incorporated municipalities Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The plan also covers 53 special districts that include school, recreation and park, water, community service and other districts. The plan has been formally adopted by each participating entity and is required to be updated a minimum of every five years (KCFD, 2012).

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2016 California Fire Code and the 2015 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees therefore (Kern County, 2017).

Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March of 2018 is the most current document that assesses the wildland fire situation throughout the SRA within the County. Similar to other plans, this document includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan provides for a comprehensive analysis of fire hazards, assets at risk, and level of services to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. Additionally, the plan provides an annual report of unit accomplishments, which, in 2017, included completion of a number of fuel reduction projects, hosted three wildfire safety expos in battalions 1, 5, and 7, and the award of three SRA fuel reduction grants for a total of \$500,000. The plan gives an over view of KCFD Battalions and ranks these areas in terms of priority needs as well as identifies the areas of SRA. According to the plan, 69 percent of Kern County areas are within a SRA. The County is broken up into six different fuel management areas, Tehachapi, Western Kern, Northern Kern, Mt. Pinos Communities, Kern River Valley, and Valley. The project site is located within Battalion 1 (Tehachapi) which is within a moderate fire hazard severity zone within the Tehachapi fire plan management area (KCFD, 2018).

Fire Prevention Standard No. 503–507 Solar Panels

The Kern County Fire Department Fire Prevention Division adopted Standard No. 503–507 Solar Panels (Ground Mounted, Commercial & Residential) on March 27, 2019. The standard is implemented in accordance with the 2016 CFC and Kern County Ordinance and is an official interpretation of the Kern County Fire Marshal's Office. The standard outlines installation requirements for photovoltaic ground-mounted and roof-mounted solar panels. The proposed project would mount systems for the modules on steel support posts that would be pile driven into the ground and would therefore comply with the ground mounted requirements

of this fire prevention standard. Ground mounted solar panel requirements of this standard include water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD, 2019c).

4.14.4 Impacts and Mitigation Measures

Methodology

The methodology used to evaluate potential public services impacts includes the following: (1) evaluation of existing fire and police services and personnel for the fire and law enforcement stations serving the project site; (2) determination of whether the existing fire and law enforcement services and personnel are capable of servicing the proposed project, in addition to the existing population and building stock; and (3) determining whether the proposed project's contribution to the future service population would cause fire or police station(s) to operate beyond service capacity. The determination of the significance of the proposed project on fire protection and emergency medical and police protection services considers the level of services required by the proposed project and the ability of KCFD and KCSO to provide this level of service and maintain the regular level of service provided throughout the County, which in turn could require the construction of new or expansion of existing facilities. The methodology for this analysis included a review of published information pertaining to KCFD and KCSO. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project would have a significant adverse effect on public services:

A project would have a significant impact on public services if it would:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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:
 - i. Fire Protection
 - ii. Police Protection
 - iii. Schools
 - iv. Parks
 - v. Other Public Facilities

Kern County determined in the NOP/IS that the following environmental issue areas would result in no impacts, therefore, are scoped out of this EIR. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding these issue areas:

- iii. Schools

iv. Parks

v. Other Public Facilities

As detailed in the NOP/IS, the proposed project would have up to six permanent onsite staff. There would be a peak workforce of 550 workers during construction; however, the average daily workforce is expected to be 350 construction, supervisory, support, and construction management personnel on site during the 30-month construction period. It is anticipated that the construction workforce would commute to the site from various local communities and the number of workers expected to relocate to the surrounding area is not expected to be substantial. If temporary housing should be necessary, it is expected that accommodations would be available in the nearby hotels in Rosamond, Mojave, Lancaster, or other local communities. Therefore, it is not expected that a substantial temporary increases in population would occur that would adversely affect local school populations, park facilities, or local public facilities, such as post office, courthouse, and library services. Operation of the project would require up to six permanent employees. As a result, no significant impacts to schools, parks, or other public services are anticipated to occur. No further analysis for these issues areas is warranted in the EIR.

Project Impacts

Impact 4.14-1: Would the Project result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services or police protection and law enforcement services?

Fire Protection

Construction

The proposed project includes an operation and maintenance facility that would be located within the project site boundaries. This facility would include a building and storage yard that would be constructed as a base for the ongoing operations and maintenance of the Sanborn Solar Project.

The average and peak number of construction workers to be onsite would be approximately 350 and 550, respectively. The presence of construction workers at the project site would be temporary, during the construction period lasting approximately 580 construction days, over the course of a 30-month period. The project would include development of a 300 megawatt (MW) solar photovoltaic power generation facility and/or energy storage capacity on approximately 2,006 acres of privately-owned land in unincorporated portions of Kern County, California. As determined by the County, the project site is not within an area of high or very high fire hazard (CAL FIRE, 2007a; CAL FIRE, 2007b).

Fire protection requirements are based on the number of residents and workers in the KCFD primary service areas. 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 uses

proposed as a part of the project. Therefore, no residents would occupy the project site and an increase in service demands as a result of an increase in residential uses would not occur.

Service demands as a result of personnel onsite would occur during construction of the proposed project. Typically, service demands per employee are less than service demands per resident. Nevertheless, the addition of construction personnel on the project site would result in an increase in demand for fire protection services. While this would be an increase above existing levels, the presence of construction workers on the site would be temporary, as the construction period for the proposed project would last approximately thirty months.

While construction of the proposed project would increase the number of people on the project site, the increase would be temporary and would therefore not substantially increase the service demand for fire protection services in Kern County. In addition, the project site is not located within an area of high or very high fire hazard, as determined by the County (Kern County, 2009) or CAL FIRE (CAL FIRE, 2007a/2007b) and would be required to implement a fire safety plan, as stated in Mitigation Measure MM 4.14-1. As required by Mitigation Measure MM 4.14-1, the project proponent would prepare and implement a fire safety plan that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code. The plan would be for use during the thirty-month construction period, as well as during operations, and would include emergency fire precautions for vehicles and equipment as well as implement fire rules and trainings so temporary employees are equipped to handle fire threats. Given the temporary nature of the project's construction phase and implementation of Mitigation Measure MM 4.14-1, impacts to fire protection services and facilities during project construction would be less than significant.

Operation

Once constructed, the proposed project would have up to six employees onsite on a permanent basis. Employees would only visit the project site for short periods of time to conduct maintenance and panel washing. Although unlikely, maintenance activities could introduce fire risks to the project site from maintenance vehicles. However, all maintenance activities would be required to comply with the fire safety plan implemented per Mitigation Measure MM 4.14-1, which would help reduce fire risks onsite. In addition, all project facilities would have been designed and constructed in accordance with the 2016 California Fire Code and Kern County Fire Code such that fire hazards are reduced and/or avoided.

The proposed project includes an energy storage facility that would have a fire rating in conformance with County and California Building Code standards. The energy storage facility will include specialized fire suppression systems installed for the battery rooms to minimize fire risk. In accordance with Mitigation Measure MM 4.14-1, a fire safety plan will be prepared to ensure the energy storage facility is constructed and operated in accordance with County and California Building Code standards that will minimize potential impacts to public services and associated fire hazards.

The proposed project would also be required to implement Mitigation Measure MM 4.14-2, which would require the project operator to pay Kern County mitigation fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation of the proposed project. Given the minimal personnel at the operations and maintenance facility and implementation Mitigation Measures MM 4.14-1 and MM 4.14-2, any potential operational impacts on fire protection services would be reduced. Therefore, the proposed project would not result in the need for new or physically altered KCFD facilities and impacts would be less than significant.

Law Enforcement Protection

Construction

As described above in Section 4.14.2, *Environmental Setting*, the KCSO provides primary law enforcement protection services for the project site and surrounding areas. The Mojave Substation is located approximately 1.5 miles northwest of the northern site and would provide primary law enforcement services to the project site. Similar to fire protection services, the need for sheriff protection services would increase during construction of the proposed project.

The project site is located in a relatively remote location surrounded by undeveloped land and sparse rural residential development and is unlikely to attract attention that would make project facilities susceptible to crime. Therefore, a large increase for KCSO services is not expected. However, construction activities may temporarily increase traffic volumes along SR-58 and SR-14 during the 30-month construction period. The added traffic associated with workers commuting to the project site, haul routes, deliveries, and other project-related traffic would be temporary and, therefore, would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways.

Additionally, fences would be installed around the perimeter of each site, substation, and other areas requiring controlled access, for safety and security purposes. All fence installation requirements would be evaluated, and the best-fit scenario would be incorporated in the project site based on the County's final determination. The fencing would remain for the life of the project.

While construction of the proposed project would increase the number of people on the project site, the increase would be temporary and negligible and, thus, would not substantially increase the service demand for police protection services in Kern County. Therefore, new or physically altered KCSO or CHP facilities would not be required to accommodate the limited increase in needs from the project during construction and impacts to police services are less than significant.

Operation

Project operation could attract vandals or present other security risks. As described above, the project site is located in a relatively remote location in a rural community and is thus unlikely to attract attention that would make project facilities susceptible to crime. The security fencing around the perimeter of each site and other areas requiring controlled access, motion-sensitive security cameras, and controlled access gates, would minimize the need for sheriff surveillance and response during project operation. Furthermore, all facility personnel, contractors, agency personnel, and visitors would be logged in and out of the facility at the main office located at the proposed O&M building during normal business hours. Therefore, new or physically altered KCSO facilities would not be required to accommodate the proposed project. The additional volume of vehicles associated with workers commuting to the project site during routine maintenance would be minor and is not expected to adversely affect traffic (see Section 4.15, *Transportation*, for more details). Therefore, impacts to the CHP patrol are not anticipated. In addition, as part of Mitigation Measure MM 4.14-2, the project operator would be required to pay mitigation impact fees to offset potential impacts on sheriff protection services. Impacts would be less than significant.

Mitigation Measures

MM 4.14-1: Prior to the issuance of grading or building permits, the project proponent/operator shall develop and implement a Fire Safety Plan for use during construction, operation and decommissioning.

The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. A copy of the approved Fire Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:

- a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.
- b. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types will maintain their factory-installed (type) muffler in good condition.
- c. Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees.
- d. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.
- e. Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats.
- f. The project proponent/operator shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.
- g. Building plans shall be included for the energy storage system to verify adherence to County and California Building Code standards.

MM 4.14-2: The project proponent/operator shall implement the following mitigation steps at the project site:

- a. For facility operation, the project proponent/operator shall pay for impacts on countywide public protection, sheriff's patrol and investigative services, and fire services at a rate of \$29.59 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.

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

Level of Significance after Mitigation

With the implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or substantially increase other environmental impacts. Cumulative impacts for a project are considered significant if the incremental effects of the individual projects are considerable when viewed in connection with the effects of past projects, and the effects of other projects located in the vicinity of the project site. The cumulative study area is based on the service area for each of the fire, sheriff, and other governmental offices/facilities serving the project site. As discussed above, fire and sheriff service impacts related to the proposed project would be less than significant with mitigation. Mitigation Measure MM 4.14-1 requires implementation of a fire safety plan during project construction and operation that would include notification procedures and emergency fire precautions to help reduce fire risks and the consequential need for fire protection services onsite. Mitigation Measure MM 4.14-2 requires the project proponent to pay applicable fees and taxes to reduce significant impacts to fire or law enforcement 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 slight contribution the project would have on the need for additional fire or police protection services, facilities or personnel required would be appropriately funded. Similar to the proposed project, all other past, present, and reasonably foreseeable future projects located within these fire and sheriff service areas were or would 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 CEQA. Should potential impacts to public services be identified, appropriate mitigation would be prescribed that would reduce impacts to less-than-significant levels.

Therefore, because the project would not create a significant impact on public services, and the other related projects would also be expected to avoid or mitigate impacts on public services, this project would comply with the goals, policies, and implementation measures of the Kern County General Plan, Mojave Specific Plan, and West Edwards Road Settlement Specific Plan, thus cumulatively significant impacts are anticipated to be less than significant. Therefore, the project would not create a cumulatively considerable impact related to public services with the incorporation of Mitigation Measures MM 4.14-1 and MM 4.12-2 and would have a less-than-significant cumulative impact.

Mitigation Measures

Implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2 would be required.

Level of Significance after Mitigation

With the implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2, cumulative impacts would be less than significant.

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4.15.1 Introduction

This section of the EIR describes the affected environment, regulatory setting, and proposed project impacts for traffic and transportation. It also describes mitigation measures that would reduce these impacts, where applicable. Information in this section is based primarily on the project's Traffic Impact Analysis (Dudek, 2019) located in Appendix K of this EIR.

4.15.2 Environmental Setting

The project is located on approximately 2,006 acres in the south-eastern portion of Kern County, approximately 1.5 miles southwest of the unincorporated community of Mohave, 7.5 miles northwest of the unincorporated community of Rosamond, and 14 miles southeast of the city of Tehachapi. The circulation system in the vicinity of the project site is made up of a combination of State and County-jurisdiction facilities. Major components of the system are discussed below and shown in Chapter 3, *Project Description*, Figure 3-1, *Site Vicinity*, of this EIR.

Regional Setting

Major Highways

The project site is located near two major highways that would provide access to the general vicinity of the proposed project during the construction and operation phases. The project site is approximately 0.5 miles south of State Route 58 (SR-58) and approximately 1.5 miles east of State Route 14 (SR-14).

State Route 14 is a divided highway that runs parallel to I-5 in the eastern portion of Kern County, providing regional access to the project site. SR-14 connects Santa Clarita (Los Angeles County) and Inyokern (Kern County). SR-14 is a four-lane divided freeway with grade-separated interchanges at Backus Road and Silver Queen Road and an at-grade intersection with Purdy Avenue near the project site.

State Route 58 is an east-west divided highway that provides regional access to the project site. SR-58 connects San Luis Obispo County and San Bernardino County. SR-58 bypasses Mojave, but a connector, Business West Route 58, is provided which intersects SR-14 northwest of the project site. In the project vicinity, SR-58 is a four-lane divided freeway with a grade-separated interchange at Altus Avenue to the north and Business West Route 58, to the south. An at-grade intersection at Business West Route 58 and Lone Butte Road would provide access to the project site.

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, there are no Designated State Scenic Highways within Kern County (see Section 4.15.3, *Regulatory Setting*, for more information on the State Scenic Highway Mapping System. The closest Eligible Scenic Highways are SR-14 north of SR-58, located approximately 5 miles north of the project site, and SR-58 east of SR-14, located approximately 2 miles northeast of the project site (Caltrans, 2017).

Prominent views along SR-14 and SR-58 adding to the scenic elements in the landscape for motorists include panoramic views of the open Mojave Desert landscapes and surrounding mountains. According to the Kern County General Plan Circulation Element, a scenic route is any freeway, highway, road, or other public right-of-way, which traverses an area of exceptional scenic quality. The Circulation Element contains goals and policies that discuss designating SR-14 as a scenic highway to protect adjacent viewsheds.

Public Transportation

Public transportation in Kern County is provided by Kern Regional Transit, which offers 17 fixed routes throughout the County and a dial-a-ride general public transportation service for residents in Frazier Park, Kern River Valley, Lamont, Mojave, Rosamond, and Tehachapi. The transit system offers intercity service along with local transit service as well as connections to Metrolink in Lancaster. The East Kern Express provides fixed route scheduled services between Bakersfield and Lancaster on SR-58 and SR-14, with stops in the communities of Tehachapi, Keene, Mojave, and Rosamond. No public transit routes pass or stop near the project site.

Non-Motorized Transportation

Bicycling is considered an effective alternative mode of transportation that can help to improve air quality, reduce the number of vehicles traveling along existing roads and highways, and reduce energy consumption. There are 67 miles of existing bicycle facilities in the unincorporated portions of Kern County. There are no dedicated bicycle facilities in the immediate vicinity of the project site or along the surrounding roadways.

A portion of the Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail or PCT) is located approximately 8.5 miles northwest of the project site.

Railways

There are two mainline railways, one operated by the Union Pacific Railroad (UPR) and the other by the Burlington Northern and Santa Fe Railway (BNSF), located near the project site. The UPR line runs parallel to SR-14, approximately 1.5 miles west of the project site, and the BNSF line runs generally parallel to SR-58, but runs directly adjacent along the west side of the northern portion of the project site.

Airport Facilities

Public and private airports located within a 20-mile radius of the project site are described below.

Mojave Air and Space Port is a public airfield located approximately 0.68-miles north of the project site. This airport has three asphalt runways (with lengths of 3,946, 7,049, and 12,503 feet) and primarily serves general aviation aircraft, with some commercial, air taxi, and military flights also using the facility. In operation since 1940, the airport serves an average of 48 flight operations per day. In 2004, this facility was the first to be certified as a spaceport by the FAA.

Rosamond Skypark is a privately-owned and operated residential airport that is open for public use, and is located about 10 miles southwest of the project site. This airport has a 3,600-foot asphalt runway and exclusively serves general aviation aircraft. In operation since 1953, the facility serves an average of 29 flight operations per day.

California City Municipal Airport is a public airfield located approximately 11 miles northwest of the project site. This airport has a 6,000-foot asphalt runway and primarily serves general aviation aircraft, with some military flights also using the facility. In operation since 1963, the airport serves an average of 68 flight operations per week.

Lloyd's Landing Airport is a privately-owned and operated airstrip, located approximately 12 miles to the southwest of the project site. Lloyd's Landing Airport is a private facility with an approximately 1,370-foot dirt runway. The facility receives no regular scheduled flights and is not publically accessible.

Edwards Air Force Base is a military base and airstrip located approximately 11.5 miles southeast of the southern site. The base is owned and operated by the U.S. Air Force (not open to public use), and includes three runways that range in length from 8,000 feet to 12,000 feet and that are paved with concrete or asphalt. The base covers more than 301,000 acres, and also includes additional landing areas on the hard packed surface of the Rogers Dry Lake and Rosamond Dry Lake. The base also supports the U.S. space shuttle program as a backup landing site.

General William J. Fox Airfield is a public airfield located about 19 miles southwest of the project site. This airport has a 7,200-foot asphalt runway and serves general aviation aircraft, limited scheduled cargo service, and U.S. Forest Service aircraft. In operation since 1959, the airfield serves an average of 224 flight operations per day.

Mountain Valley Airport is a private airport that allows public access located approximately 19 miles northwest of the project site. The airport has two runways, each 4,890 feet long, and primarily serves general aviation aircraft, with some military flights also using the facility. In operation since 1968, the airport serves an average of 137 flight operations per day.

Local Setting

Site Access

Site access for the three main project components, the north and south sites and the gen-tie line, are described below.

Northern Site

Construction-related traffic (i.e., workers and truck traffic) traveling to/from the north site would use Business West Route 58 and its intersection with Lone Butte Road. Project traffic would travel south along Lone Butte Road to access solar generation site work areas. The north site would be accessed through gates from a private access easement along the alignment of Lone Butte Road, from SR-58 south to the edge of the northern site boundary, shown in Figure 3-4. The BNSF Railway forms the western edge of the northern site and the gen-tie line crosses the BNSF Railway in two locations.

Southern Site

Construction-related traffic (i.e., workers and truck traffic) traveling to/from the south site would use SR-14 and its ramp intersections with Backus Road. Since Backus Road does not have a railroad crossing at its intersection with Sierra Highway, project traffic would travel south towards the Sierra Highway/Sopp Road intersection where there is an existing railroad crossing on Sopp Road. Then vehicles will travel east along

Sopp Road and finally north along Lone Butte Road to access the south site via Trotter Avenue, Reed Avenue, or Silver Queen Road as shown in Figure 3-5.

Gen-Tie Line

Construction-related traffic (i.e., workers and truck traffic) traveling to/from the gen-tie line would use SR-14 and its intersection with Purdy Avenue. Construction-related activities would occur on both east and west sides of SR-14, along Purdy Avenue and Oak Creek Road. This includes the gen-tie crossing the south side of Purdy Avenue at its intersection with SR-14.

Traffic Analysis

Considering the access routes described above, this traffic impact analysis evaluates the following six intersections (all unsignalized) in the vicinity of the project site, where project traffic would contribute turning vehicles:

1. Lone Butte Road/SR-58
2. SR-14/Purdy Avenue
3. SR-14 southbound ramps/Backus Road
4. SR-14 northbound ramps/Backus Road
5. Sierra Highway/Backus Road
6. Sierra Highway/Sopp Road

In addition, the following ten roadway/freeway segments in the vicinity of the project site were evaluated:

1. Lone Butte Road, south of Trotter Avenue
2. Lone Butte Road, north of Trotter Avenue
3. United Street, between Purdy Avenue and Reed Avenue
4. Sierra Highway, between Silver Queen Road and Trotter Avenue
5. Holt Street, between Purdy Avenue and Silver Queen Road
6. Purdy Avenue, east of SR-14
7. Oak Creek Road, near Westwind and Windhub Substations
8. SR-14, north of SR-58
9. SR-14, between SR-58 and Silver Queen Road
10. SR-14, south of Silver Queen Road

Existing peak hour counts and average daily traffic (ADT) counts at the study intersections and roadway segments were conducted in November 2017 and April 2018 during a typical non-holiday week. As shown in **Table 4.15-1, *Existing Conditions AM and PM Peak Hour Level of Service***, the intersections and roadway segments serving the project area currently operate at Level of Service (LOS) A or LOS B during the analyzed time periods based on average intersection delay and roadway volume-to-capacity (v/c) ratios.

TABLE 4.15-1: EXISTING CONDITIONS AM AND PM PEAK HOUR LEVEL OF SERVICE

Study Intersection	AM Peak Hour	PM Peak Hour
1.Lone Butte Road/SR-58	LOS A	LOS A
2.SR-14/Purdy Avenue	LOS B	LOS B
3.SR-14 southbound ramps/Backus Road	LOS A	LOS A
4.SR-14 northbound ramps/Backus Road	LOS A	LOS A
5.Sierra Highway/Backus Road	LOS A	LOS A
6.Sierra Highway/Sopp Road	LOS A	LOS A
Study Roadway Segment	Daily LOS	
Lone Butte Road		
• South of SR-58	LOS A/B	
• North of Trotter Avenue	LOS A/B	
United Street	LOS A/B	
• Between Purdy Avenue and Reed Avenue		
Sierra Highway	LOS A/B	
• Between Silver Queen Road and Trotter Avenue		
Holt Street	LOS A/B	
• Between Purdy Avenue and Silver Queen Road		
Purdy Avenue	LOS A/B	
• East of SR-14		
Oak Creek Road	LOS A/B	
• near Westwind and Windhub Substations		
SR 14		
• North of SR-58	LOS A/B	
• Between SR-58 and Silver Queen Road	LOS A/B	
• Between Silver Queen Road and Backus Road	LOS A/B	
SOURCE: Dudek, 2019		

4.15.3 Regulatory Setting

Federal

Federal Aviation Administration (FAA)

The FAA regulates aviation at regional, public, and private airports. The FAA regulates objects affecting navigable airspace. According to 49 Code of Federal Regulations Part 77.9, any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA of:

- Any construction or alteration exceeding 200 feet above ground level;

- Any construction or alteration:
 - Within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway where the longest airport runway exceeds 3,200 feet in actual length;
 - Within 10,000 feet of a public use or military airport which exceeds a 50:1 surface from any point on the runway where the longest airport runway is less than 3,200 feet in actual length; and
 - Within 5,000 feet of a public use heliport which exceeds a 25:1 surface;
- Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed the above standards;
- When requested by the FAA; and
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

Failure to comply with the provisions of Federal Aviation Regulation Part 77 is subject to civil penalty under Section 902 of the Federal Aviation Act of 1958, as amended, and pursuant to 49 United States Code Section 46301(a).

State

California Department of Transportation

Caltrans has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. Eastern Kern County (i.e., including the project site and surrounding area) has been under the jurisdiction of Caltrans District 9 as of November 2015; prior to that time, all of Kern County was under the jurisdiction of Caltrans District 6. The Caltrans regulations below apply to potential transportation and traffic impacts of the project.

California Vehicle Code (CVC), Division 15, Chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

California Street and Highway Code, Sections 660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of State and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

Project Development Procedures Manual, Chapter 27. Access Control Modification. Requires Caltrans approval of proposed connections to a public road through submittal of a proposal to Caltrans (Caltrans, 2016).

Local

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

stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

The design LOS for Kern County is LOS C. The minimum LOS for conformance with the Kern County General Plan is LOS D.

Circulation Element

2.1. Introduction

Goals

- Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.
- Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the County.

2.3.3. Highway Plan

Goal

- Goal 5: Maintain a minimum LOS D.

Policies

- Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and midsection lines. This is because the road centerline can be determined by an existing survey.
- Policy 2: This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond 2010. Where the Kern County Planning and Natural Resources Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert regions for arterial right-of-way. The County shall routinely protect all midsection lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow construction on surveyed section and midsection lines, right-of-way width shall be the size shown on the diagram map. No surveyed section and midsection "grid" will comprehensively apply to the Mountain Region.
- Policy 3: This plan's road-width standards are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and

other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.

- Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;
- Arterial [Major Highway] Minimum 110-foot right-of-way;
- Collector [Secondary Highway] Minimum 90-foot right-of-way;
- Commercial-Industrial Street Minimum 60-foot right-of-way; and
- Local Street [Select Local Road] Minimum 60-foot right-of-way.

Implementation Measure

Measure A: The Planning Department shall carry out the road network policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. The Planning Department can help developers and property owners in identifying where planned circulation is to occur.

2.3.4. Future Growth

Goal

Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

Policies

Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below LOS D. Utilization of the CEQA process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space, and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.

Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along state routes are necessary then roads shall be built to Caltrans standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.

Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.

Policy 6: The County may accept a developer's road into the County's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.

Implementation Measures

Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

2.3.10. Congestion Management Programs

State law requires that urbanized counties prepare an annual congestion management program (CMP). City and county eligibility for new gas tax subventions is contingent upon their participation in the congestion management program. To qualify for funding provided through the State Transportation Improvement Program (STIP) or the Federal Transportation Improvement Program (FTIP), the regional transportation agency must keep current a Regional Transportation Program (RTP) that contains the CMP. Also, the CMP offers local jurisdictions the opportunity to find cooperative solutions to the multi-jurisdictional problems of air pollution and traffic congestion.

The CMP has links with air quality requirements. The California Clean Air Act requires that cities and counties implement transportation control measures (TCMs) to attain, and maintain, the State air quality standard.

Goals

Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern COG's CMP.

Goal 2: To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.

Policies

Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated the Kern COG as the County's Congestion Management Agency (CMA).

Policy 2: The CMA is responsible for developing, adopting, and annually updating a CMP. The CMP is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also the Kern COG), regional transportation providers, local governments, Caltrans, and the air pollution control district.

Implementation Measures

Measure A: The Kern COG should request the proper consultation from County of Kern to develop and update the proper congestion management program.

Measure B: The elements within the Kern Congestion Management Program are to be implemented by each incorporated city and the County of Kern. Specifically, the land use analysis program, including the preparation and adoption of deficiency plans is required. Additionally, the adoption of trip reduction and travel demand strategies are required in the Congestion Management Program.

2.5.1. Trucks and Highways

The Kern County road network handles a high ratio of heavy truck traffic. State highways carry most of this traffic. Most of the trucks are interstate carriers. As such, interstate trucking is not under the direct control of County officials. In as much as this traffic affects County residents and taxpayers, they need actions to guarantee State highways in Kern County receive a fair share of California's transportation investment.

Goals

- Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.
- Goal 2: Reduce potential overweight trucks.
- Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.

Policies

- Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.
- Policy 2: Start a program that monitors truck traffic operations.
- Policy 3: Promote a monitoring program of truck lane pavement condition.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The goal, policies, and implementation measures in the Mojave Specific Plan for traffic and transportation applicable to the project is provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 6. Circulation Element

Goal

- Goal 1: Provide for adequate circulation to support future growth.

Objective

- Objective 6.1: Provide adequate transportation facilities to serve area residents and commercial and industrial businesses.

Policies

- Policy 6.1.1: Provide and maintain a circulation system that supports the types and intensities of land use in Mojave.

- Policy 6.1.4: With the exception of State highways, all roadways and rights-of-way shall be constructed to Kern County Development Standards. State highways shall be constructed to Caltrans standards.
- Policy 6.1.6: Coordinate with developers for the improvement of local streets in conjunction with an approved phased development, subject to approval of the Roads Department in accordance with the Kern County Land Division Ordinance and Kern County Development Standards.
- Policy 6.1.8: Maintain a minimum service level of “D” or better on Circulation Element roadways. Maintain a minimum service level of “C” or better on Caltrans roadways.
- Policy 6.1.9: Require new development to contribute to the financing of roadway improvements, including, lighting, roadway, railroad crossings, and traffic signals required to meet the demand generated by the project.
- Policy 6.1.13: Roadways for new development shall be developed in accordance with Kern County Development Standards.
- Policy 6.1.14: Final driveway access locations and design shall be determined through acquisition of an encroachment permit from the Kern County Roads Department at the time development occurs.

Implementation Measures

- Implementation Measure F-4: As a part of discretionary permit approval, plans should be reviewed for street improvements, including landscaping and lighting. Where necessary, require establishment of a County Service Area (CSA) to maintain lighting and landscaping adjacent to County roads.
- Implementation Measure F-12a: New development projects will have conditions of approval applied requiring construction of roadway improvements, dedications, and/or payment of in-lieu fees to provide circulation system improvements consistent with the Specific Plan Circulation Element.
- Implementation Measure F-12d: No development or building permit will be approved unless the County finds that adequate circulation system capacity exists or can be made to exist to accommodate the demands of the use/development proposed.
- Implementation Measure F-12e: A traffic analysis shall be submitted with any submittal of a precise development plan, division application, or zone change that implements the plan, and/or conditional use permit. The traffic analysis shall provide a trip generation for all vehicular traffic, the necessary improvements to the existing circulation system and the project's pro-rata share of signalization, and improvements on Kern County and the State Department of Transportation network. The traffic analysis shall be reviewed and approved by the Kern County Roads Department and the State Department of Transportation. Recommendations, as approved by the Roads Department, shall become conditions of approval. This requirement may be waived by the Roads Department, in conjunction with the State Department of Transportation.

Implementation Measure F-12f: Amendments to the Plan shall require preparation of a traffic study, including site-specific and regional current traffic counts for review and approval by the Roads Department and the State Department of Transportation. Recommendations for regional improvements and development contribution to maintain adopted Levels of Service shall be included.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. The goal, policy, and implementation measures in the West Edwards Road Settlement Specific Plan for traffic and transportation applicable to the project is provided below. The West Edwards Road Settlement Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the West Edwards Road Settlement Specific Plan are incorporated by reference.

Chapter 2. Circulation Element

Goal

Goal 2.1.13: To promote adequate road improvement standards for all new developments.

Policy

Policy 2.1.3.1: When development occurs, street rights-of-way shall be improved and dedicated to the County in accordance with all applicable County standards and ordinances.

Implementation Measures

Implementation Measure 2.1.4.1: Streets shall be improved to Type A Subdivision Standards as a requirement for a conditional use permit, final map subdivision, or parcel map.

Implementation Measure 2.1.4.2: The developer shall be responsible for the construction of street improvements in accordance with the Kern County Land Division Ordinance.

Kern Council of Governments Congestion Management Program

All urbanized areas with a population larger than 200,000 residents are required to have a Congestion Management System, program, or process. The Kern COG refers to its congestion management activities as the CMP. The Kern COG was designated as the CMA.

The CMP provides a systematic process for managing congestion and information regarding (1) transportation system performance, and (2) alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet State and local needs. The purpose of the CMP is to ensure that a balanced transportation system is developed that relates population growth, traffic

growth and land use decisions to transportation system level of service (LOS) performance standards and air quality improvement. The program attempts link land use, air quality, transportation, advanced transportation technologies as integral and complementary parts of this region's plans and programs.

The purpose of defining the CMP network is to establish a system of roadways that will be monitored in relation to established LOS standards. At a minimum, all State highways and principal arterials must be designated as part of the Congestion Management System of Highways and Roadways. Kern County has 18 designated state highways.

Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern COG, and was adopted on August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, State, and federal agencies. Included in the 2018 RTP is the Sustainable Communities Strategy (SCS), which is required by California's Sustainable Communities and Climate Protection Act, of Senate Bill (SB) 375. The California Air Resources Board (CARB) set Kern greenhouse gas (GHG) emissions reductions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low income housing need and transportation planning. Kern COG engaged in the RHNA process concurrently with the development of the 2018 RTP. This process required Kern COG to work with its member agencies to identify areas within the region that can provide sufficient housing for all economic segments of the population and ensure that the state's housing goals are met.

The intent of the SCS is to achieve the State's emissions reduction targets for automobiles and light trucks. The SCS will also provide opportunities for a stronger economy, healthier environment, and safer quality of life for community members in Kern County. The RTP seeks to: improve economic vitality; improve air quality; improve the health of communities; improve transportation and public safety; promote the conservation of natural resources and undeveloped land; increase access to community services; increase regional and local energy independence; and increase opportunities to help shape our community's future.

The 2018 RTP financial plan identifies how much money is available to support the region's transportation investments. The plan includes a core revenue forecast of existing local, state and federal sources along with funding sources that are considered to be reasonably available over the time horizon of the RTP. These new sources include adjustments to state and federal gas tax rates based on historical trends and recommendations from two national commissions (National Surface Transportation Policy and Revenue Study Commission and National Surface Transportation Infrastructure Financing Commission), leveraging of local sales tax measures, local transportation impact fees, potential national freight program/freight fees, future state bonding programs and mileage based user fees (Kern COG, 2018).

Kern County Airport Land Use Compatibility Plan (ALUCP)

The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and criteria to assist Kern County and affected incorporated cities in addressing compatibility issues between airports and surrounding land uses. As noted above in Section 4.15.2, *Environmental Setting*, the proposed project is

located within 20 miles of three public airports, three private airstrips, and one military base. The project site is located within the Airport Influence Area of the Mohave Air and Spaceport, and would therefore be subject to review by the East Kern Airport District to ensure conformance with any designated restrictions (e.g., building height, glare, electrical interference).

4.15.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts to transportation have been evaluated using a variety of resources, including the Traffic Impact Analysis (Dudek, 2019) prepared for the proposed project, which is attached as Appendix K of this EIR. Traffic impacts from implementation of the proposed project were evaluated for the site by establishing trip generation rates for both the construction and operational phases of the project. Trip generation is based primarily on the number of workers and the types of equipment that would be used.

Project Trip Generation, Distribution, and Assignment

The majority of construction vehicle trips would be associated with construction employees traveling to and from the site during peak weekday hours. Construction personnel are anticipated to travel from the north (i.e., Ridgecrest and Victor Valley area), from the south (i.e., Lancaster and Palmdale area), and from the east (Barstow area). It is assumed that construction staff not drawn from the local labor pool would stay in the local hotels in Rosamond, Mojave, Tehachapi, California City, or other local cities. Thus, 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 project site during both peak and non-peak periods. Heavy equipment used at the site would not be hauled to and from the project site daily, but would be brought in at the beginning of construction and taken out upon completion of construction.

Project trips were distributed to the study area intersections and roadway segments using the regional location of the proposed project, logical commute routes for workers, and available truck routes for project-related trucks. A majority of construction-related project traffic for the proposed solar generation sites would access the study area via Business West Route 58, at its existing intersection with Lone Butte Road for the northern solar site; and, SR-14, at its existing intersection with Backus Road and existing railroad crossing on Sopp Road at the Sierra Highway/Sopp Road intersection for the southern solar site. For construction of gen-tie routes east and west of SR-14, most of the traffic would access the work site via SR-14 at its intersection with Purdy Avenue. The project traffic utilizing SR-14 and SR-58 would consist of all of the material and equipment delivery trucks, and construction workers accessing the site.

Approximately 5 percent of the traffic would access the project site from the north (from the Ridgecrest and Victor Valley areas), and approximately 85 percent of the traffic would access the project from the south (Lancaster and Palmdale area). Approximately 10 percent of the traffic would access the project site from the east (Barstow area). Project trips were assigned to the study area intersections by applying the project trip generation estimates to the trip distribution percentages at each study area intersection and roadway segments.

Methodology and assumptions for the traffic assessment included the following:

Construction Trips

The proposed schedule for construction modeling of the solar facility component of the proposed project is approximately 18 months from February 2020 to August 2021. The proposed schedule of construction for the gen-tie component of the proposed project is approximately four months from April 2021 to August 2021. The overlap of construction Phases 1 through 4 is estimated to generate peak worker and truck traffic of 475 workers, 65 vendor trucks, and 52 haul trucks. This peak construction scenario would last approximately nine weeks or 45 days (assuming five work days per week). Additionally, construction of the gen-tie line is estimated to require 60 workers, one vendor truck and two haul trucks. Overall the project would require approximately 50 onsite trucks that may be required for onsite equipment and material delivery as well as onsite transportation from laydown and parking areas to specific locations along the project sites and the gen-tie line.

Construction would be limited to between 6 a.m. and 9 p.m., in accordance with County requirements. However, construction would primarily occur during daylight hours, Monday through Friday, between 7 a.m. and 6 p.m., as required to meet the construction schedule.

The proposed project would employ an average workforce of approximately 350 people, but may increase to 475 during the 9 week/45 workday period when the schedule for Phases 1 through 4 (site preparation, system installation, perimeter fence installation, and underground work) would overlap. Vehicles carrying construction workers were conservatively assumed to have an occupancy rate of 1.25 (i.e., 1.25 workers per vehicle) and would travel to and from the project site during the AM and PM peak traffic hours.

The proposed project would require up to 117 offsite delivery trucks (trucks delivering materials from offsite locations), and 40 onsite trucks (trucks delivering workers and/or materials between the work areas).

Passenger car equivalent (PCE) factors were used to account for the project's truck traffic and provide a more realistic measurement in terms of the impact of project-related truck traffic.

Operations and Maintenance Trips

Operation and maintenance of the solar facility would require trucks, forklifts, and loaders for routine and unscheduled maintenance, and water trucks for solar panel washing. The solar facility may require six full-time personnel for operation, maintenance and security. Additional maintenance and security personnel would be dispatched to the solar facility, as needed. Activities associated with the operation and maintenance of the gen-tie line would be only be as-needed and are not likely to generate significant daily or peak hour traffic.

Roadway Traffic Volumes

Traffic counts on roadways and at intersections where the proposed project is expected to add vehicle trips were conducted as part of the traffic analysis for the proposed project. This information was used to examine existing roadway and intersection conditions related to congestion and delay. LOS data were calculated in order to describe the degree of congestion delay at the intersections. For example, according to the Highway Capacity Manual (HCM), LOS A occurs at an unsignalized intersection when the average stopped delay is no more than 10.0 seconds per vehicle stopped on the side street at that intersection (Transportation

Research Board, 2000). Kern County General Plan Circulation Element LOS standards require that Kern County intersections operate at LOS D or better, and Caltrans' target for peak-hour intersection operations is LOS C or better. **Table 4.15-2**, *Level of Service Descriptions*, presents the Transportation Research Board's description of LOS A through F. Current levels of service for area roadways were evaluated based on Kern County roadway segment capacities and LOS thresholds.

TABLE 4.15-2: 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.

Trip generation forecasts were developed for scenarios occurring under both peak project construction and project operation. Given the substantially higher level of trip generation for construction, the peak construction trip generation scenario is considered the worst-case condition for the lifecycle of the proposed project and thus would provide the most conservative estimate.

Thresholds of Significance

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

A project could have a significant adverse effect on transportation if it would:

- a. Conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows:
 - i. Metropolitan Bakersfield General Plan LOS C, and
 - ii. Kern County General Plan LOS D
- b. Conflict or be inconsistent with CEQA *Guidelines* Section 15064.3, subdivision (b);
- c. Substantially increases hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- d. Result in inadequate emergency access.

As lead agency, Kern County determined in the Notice of Preparation/Initial Study (NOP/IS), attached as Appendix A of this EIR, that the project would not result in significant impacts to one of these environmental issue areas; this issue is thus scoped out of this EIR. It was determined that the project would not:

- a. Conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows:
 - i. Metropolitan Bakersfield General Plan LOS C, and

As detailed in the NOP/IS, the project is not located in or near the metropolitan Bakersfield area. Therefore, further analysis of this topic in the EIR is not warranted.

Project Impacts

Impact 4.15-1: The project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows: Kern County General Plan LOS “D.”

Construction

To determine construction-related trip generation for the proposed project, the project description and construction staging operations were reviewed to identify construction worker-related trips and system/materials delivery-related trips. The majority of construction vehicle trips to and from the project site would be associated with construction workers and trucks making deliveries. Heavy equipment used at the project site would not be hauled to and from the site daily, but would be hauled in at the beginning of construction and hauled out upon completion of construction. Construction trips would occur throughout the day, but because the proposed project does not require intense grading/offsite hauling, the majority of the trips would be associated with construction workers traveling to and from the site during the peak hours. As described above, the onsite workforce is expected to average 350 individuals during the most intensive phase of construction, but may increase to 475 workers for short periods of time.

According to Kern County Ordinance Section 8.36.020, all construction shall be limited to the hours of 6 a.m. to 9 p.m. Therefore, construction may occur during AM peak (7 a.m. to 9 a.m.) or PM peak (4 p.m. to 6 p.m.) commute periods. However, as is typical with construction activities, trips are anticipated to be distributed over longer AM and PM periods and would not necessarily coincide with the traditional commuting peak periods of 7 a.m. to 9 a.m. or 4 p.m. to 6 p.m. However, to provide a worst-case scenario, the traffic analysis assumed that all construction workers would arrive at the project site during the AM peak hour and depart the project site during the PM peak hour. The maximum of 117 offsite delivery trucks (trucks delivering materials from offsite locations), and 40 onsite trucks (trucks delivering workers and/or materials between the work areas) were assumed be evenly distributed over the course of the entire workday.

As shown in **Table 4.15-3, Passenger Car Equivalent (PCE) Trip Generation**, construction-related activity associated with the proposed project is forecast to generate (during the peak construction phase overlap) up to approximately 1,702 PCE vehicle trips. There would be up to an estimated 476 PCE vehicle trips during the AM and PM peak hours.

TABLE 4.15-3: PASSENGER CAR EQUIVALENT (PCE) TRIP GENERATION

Vehicle Type	Daily Quantity	Daily Trips ^a	AM Peak Hour		PM Peak Hour	
			Inbound	Outbound	Inbound	Outbound
Workers	475	760	380	0	0	380
Delivery Trucks	117	702	36	36	36	36
Onsite Trucks	40	240	12	12	12	12
Total Trips		1,702	428	48	48	428

NOTE:

^a A vehicle occupancy rate of 1.25 was applied to workers; A PCE factor of 3.0 was applied to delivery trucks and onsite trucks.

SOURCE: Dudek, 2019.

Existing plus Project Construction Conditions Level of Service

Table 4.15-4, Existing plus Project Conditions Level of Service Conditions, shows the results of the Existing plus Project LOS analysis and provides a comparison to the existing (without project) conditions for the weekday peak hours using HCM methodology for unsignalized intersections and Caltrans intersections. Detailed LOS worksheets are included in Appendix K. Based on the appropriate significance criteria, all study area intersections are forecast to continue to operate at LOS D or better with the addition of the construction-related project traffic from both the solar generation sites and the gen-tie. Based on the appropriate significance criteria, all roadway segments are forecast to continue to operate at LOS A/B or better with the addition of the construction-related project traffic. Therefore, construction impacts would be less than significant. In addition, the worsening of certain LOS relating to construction traffic would be temporary in nature (i.e., 9 weeks for the conditions described in Table 4.15.4, and less for the remaining duration of construction).

Operation and Maintenance

The project would include one onsite operations and maintenance (O&M) building, to be utilized by a maximum of six permanent staff employees for ongoing facility monitoring, equipment storage and repairs during the operational phase of the project. The solar panel surfaces may be washed seasonally to increase operational efficiency. Panel washing is expected to take 45 days to complete per wash, up to four times per year. Additional staff of up to 10 people would be required during panel washing and are expected to be hired from the local community. Trips associated with operation and maintenance would generate a maximum of 16 daily trip while panel washing is underway, which are considered negligible in terms of traffic impact. Ongoing maintenance and periodic repair are also anticipated to produce negligible results in terms of traffic impact.

When feasible, required planned maintenance would be scheduled to avoid peak load periods, and maintenance and security personnel would travel to the site during off-peak times. Unplanned maintenance would typically be responded to as needed depending on the event. These maintenance activities would not generate trips on a regular basis, and the estimated trips by full-time project personnel would generate minimal operational traffic. Trips generated by project operation and maintenance would be substantially lower than the trips generated by project construction, and as stated above, the impact during construction would be less than significant. As such, project operation would have a less-than-significant impact on area roadways and intersections.

TABLE 4.15-4: EXISTING PLUS PROJECT CONDITIONS LEVEL OF SERVICE CONDITIONS

Study Intersection	Existing		Existing plus Project		Significant Impact?
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
1. Lone Butte Road/SR-58	LOS A	LOS A	LOS A	LOS B	No
2. SR-14/Purdy Avenue	LOS B	LOS B	LOS C	LOS D	No
3. SR-14 southbound ramps/Backus Road	LOS A	LOS A	LOS A	LOS B	No
4. SR-14 northbound ramps/Backus Road	LOS A	LOS A	LOS B	LOS B	No
5. Sierra Highway/Backus Road	LOS A	LOS A	LOS A	LOS A	No
6. Sierra Highway/Sopp Road	LOS A	LOS A	LOS B	LOS B	No

Study Roadway Segment	Existing	Existing plus Project	Significant Impact?
	Daily	Daily	
Lone Butte Road			
• South of SR-58	LOS A/B	LOS A/B	No
• North of Trotter Avenue	LOS A/B	LOS A/B	No
United Street	LOS A/B	LOS A/B	
• Between Purdy Avenue and Reed Avenue			No
Sierra Highway	LOS A/B	LOS A/B	
• Between Silver Queen Road and Trotter Avenue			No
Holt Street	LOS A/B	LOS A/B	
• Between Purdy Avenue and Silver Queen Road			No
Purdy Avenue	LOS A/B	LOS A/B	
• East of SR-14			No
Oak Creek Road	LOS A/B	LOS A/B	
• Near Westwind and Windhub Substations			No
SR-14			
• North of SR-58	LOS A/B	LOS A/B	No
• Between SR-58 and Silver Queen Road	LOS A/B	LOS A/B	No
• Between Silver Queen Road and Backus Road	LOS A/B	LOS A/B	No

SOURCE: Dudek, 2019.

Decommissioning

At the end of the project site's operational term, the project operator may determine that the project site should be decommissioned and deconstructed, which would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, state, and county regulations. Decommissioning impacts would be relatively similar to those identified for construction of the proposed project and would be short-term and temporary. Thus, decommissioning of the proposed project would

result in a less-than-significant impact with respect to LOS for roadways and would not conflict with the Kern COG Congestion Management Program.

Transit, Bicycle, and Pedestrian Facilities

There are no dedicated pedestrian or bicycle facilities in the immediate vicinity of the project site or along the surrounding roadways. Due to the rural nature of the project area, bicycle traffic is limited. The project is not located along an existing bus route and few bus stops exist on the roadways likely to be used during construction and operation. The project would not house residents or employees and, therefore, would not have characteristics that could influence alternative means of transportation. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.15-2: The project would conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

The new CEQA *Guidelines* Section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA *Guidelines* criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas, and shifts the focus from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. Vehicle miles traveled, or VMT, is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

The newly adopted guidance provides that a lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide. Kern County is currently engaged in this process and have not yet formally adopted its updated transportation significance thresholds or its updated transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a traffic impact. Therefore, impacts related to CEQA *Guidelines* Section 15064.3, subdivision (b) would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.15-3: The project would substantially increase hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

During construction, the proposed project would require the delivery of heavy construction equipment and PV solar components using area roadways, some of which may require transport by oversize vehicles. Heavy equipment associated with these components would not be hauled to/from the site daily, but rather would be hauled in and out on an as-needed basis. Nevertheless, the use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space, which is considered a potentially significant impact.

The proposed project would not include a design feature or utilize vehicles with incompatible uses that would create a hazard on the roadways surrounding the project site. The need for and number of escorts, California Highway Patrol escorts, as well as the timing of transport, would be at the discretion of Caltrans and Kern County, and would be detailed in respective oversize load permits. Thus, potential impacts would be reduced to a less-than-significant level. While impacts would be less than significant, Mitigation Measure MM 4.15-1 would require that all oversize vehicles used on public roadways during construction obtain required permits and obtain approval of a Construction Traffic Control Plan, as well as identify anticipated construction delivery times and vehicle travel routes in advance to minimize construction traffic during AM and PM peak hours and to avoid any potentially hazardous routes. This measure would also ensure that construction-related oversize vehicle loads are in compliance with applicable California Vehicle Code sections and California Street and Highway Codes applicable to licensing, size, weight, load, and roadway encroachment of construction vehicles.

Mitigation Measures

MM 4.15-1: Prior to the issuance of construction or building permits, the project proponent/operator shall:

- A. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 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:
 - i. Timing of deliveries of heavy equipment and building materials;
 - ii. Directing construction traffic with a flag person;
 - iii. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;
 - iv. Establish procedures for coordinating with local emergency response agencies to ensure dissemination of information regarding emergency response vehicle routes affected by construction activities;
 - v. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;

- vi. Maintaining access to adjacent property;
- vii. Encourage carpooling among workers to reduce worker commute trips entering and exiting the study area; and
- viii. 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.
- ix. Restrict and distribute PM peak hour traffic flows associated with the construction of gen-tie facilities onto adjacent roadways so that some traffic would use higher capacity facilities, rather than Purdy Avenue, to complete the left-turn movements across SR-14, as follows:
 - a. All east-bound left turning project traffic related to the gen-tie component shall utilize Silver Queen Road or Oak Creek Road to access SR-14 during the PM peak hour.
 - b. A portion of the west-bound project traffic, equal to or greater than five vehicles, shall utilize the Backus Road interchange to access SR-14 during the PM peak hour.

Monitoring shall be conducted on a weekly basis by the project proponent/operator and any deficiencies shall be corrected immediately. Proof of compliance shall be available and furnished at the request of the Kern County Public Works Department-Development Review at any time during construction of gen-tie facilities.

- B. Obtain all necessary encroachment permits for work within the road right-of-way or use of oversized/overweight vehicles that will utilize County-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved 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.
- C. Enter into a secured agreement with Kern County to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and/or Kern County.
- D. Submit documentation that identifies the roads to be used during construction. The project proponent/operator shall be responsible for repairing any damage to non-county maintained roads that may result from construction activities. The project proponent/operator shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the Kern County Public Work Department-Development Review and the Kern County Planning and Natural Resources Department.
- E. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log and inspection report to the County. This information shall be submitted in DVD format. The County, in consultation with the project proponent/operator's engineer, shall determine the extent of remediation required, if any.

Level of Significance after Mitigation

With Implementation of Mitigation Measure MM4.15-1, impacts would be less than significant.

Impact 4.15-4: The project would result in inadequate emergency access.

The project site is located in a rural area with the primary access roads (Backus Road, Lone Butte Road, and Purdy Avenue) allowing adequate egress/ingress to the site in the event of an emergency. Additionally, as part of the project, additional onsite access roadways (internal to the site) would be constructed. Therefore, the development of the proposed project would not physically interfere with emergency vehicle access or personnel evacuation from the site.

As described above, increased project-related traffic would not cause a significant increase in congestion or significantly worsen the existing service levels at intersections on area roads; therefore, project-related traffic would not affect emergency access to the project site or any other surrounding location. The proposed project would not require closures of public roads, which could inhibit access by emergency vehicles. For these reasons construction and operation would have a less-than-significant impact on emergency access.

While impacts would be less than significant, Mitigation Measure MM 4.15-1 would provide further assurances for emergency access. Mitigation Measure MM 4.15-1 requires the preparation of a Construction Traffic Control Plan that considers access for emergency vehicles to the project site. During project operation, Mitigation Measure MM 4.15-1 requires the project operator obtain Kern County approval of all proposed access road designs prior to construction, further ensuring onsite emergency access is adequate.

Mitigation Measures

Implementation of Mitigation Measure MM 4.15-1 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.15-1, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The potential for cumulative transportation impacts exists where there are multiple projects proposed in an area that have overlapping construction schedule and/or project operations that could affect similar resources. Projects with overlapping construction schedules and/or operations could result in a substantial contribution to increased traffic levels throughout the surrounding roadway network. As discussed previously, with the addition of project construction- and operation-generated trips, study area intersections and roadway segments near the project site, would continue to operate at an acceptable LOS according to the County and Caltrans performance criteria. As such, the proposed project would not result in any individual transportation impacts during construction or operation and maintenance activities. However, cumulative impacts could result if the project's incremental effect were combined with impacts of other past, present and reasonably foreseeable future projects.

Cumulative Projects

A list of cumulative projects within a 1-mile and 6-mile radius of the project site are provided in Chapter 3, *Project Description*. The cumulative projects are projects that are proposed and in the review process, but not yet fully approved; or, projects that have been approved, but not fully constructed or occupied. Based on review of the project characteristics, status, and locations of cumulative projects, three projects were identified that would likely add traffic to the study area roadway segments and intersections. Traffic generated by projects outside the 1-mile radius (6-mile or greater radius) of the project site were included in an ambient growth rate calculated from historical Caltrans average daily traffic volumes along SR-14.

The cumulative projects considered in the cumulative impact analysis are identified in **Table 4.15-5, Estimated Peak-Hour Trips – Cumulative Projects**. Construction-related activity associated with concurrent construction of those related projects is forecast to generate up to approximately 722 daily trips, and 111 AM and PM peak hour trips.

TABLE 4.15-5: ESTIMATED PEAK-HOUR TRIPS – CUMULATIVE PROJECTS

Project	Average Daily Trips	AM Peak Hour Trips		PM Peak Hour Trips	
		Inbound	Outbound	Inbound	Outbound
Mojave Mobile Home ^a	6	0	1	1	0
Service Rock Products Concrete Batch Plan ^b	240	8	8	8	8
Edwards Air Force Base Solar Enhanced Use Lease (EUL) and Gen-Tie Line Construction ^c	476	76	18	18	76
Total	722	84	27	27	84

NOTES:

^a Trip generation estimated using the Mobile Home Park (ITE 240) trip rate from the Institute of Transportation Engineers (ITE), Trip Generation, 10th Edition, 2017.

^b Trip generation estimated from Kjelstrom & Associates - Service Rock Products Mitigated Negative Declaration (MND), 2006. Two concrete batching plants (ready mixed and asphaltic) employ up to 20 drivers, with truck traffic averaging approximately 40 roundtrips per day during a 16-hour work schedule (two shifts from 3 a.m.–7 p.m.). Trips are reported in passenger car equivalents (PCE).

^c Trip generation from the Edwards Air Force Base (AFB) Solar Enhanced Use Lease (EUL) Traffic Impact Analysis (TIA), 2018. Trips are reported in PCE.

SOURCE: Dudek, 2019.

Cumulative Traffic Volumes

Cumulative traffic volumes for 2020 were estimated by applying an annual ambient growth rate and adding traffic from cumulative projects to the existing traffic volumes. Recent ADT volumes reported by Caltrans along SR-14 indicate that traffic within the region has increased by an average of approximately 5 percent per year between 2013 and 2017. Therefore, an annual growth rate of 5 percent for a period of two years was applied to the existing 2018 traffic volumes, plus daily and peak hour traffic from cumulative projects were added to the existing 2018 traffic volumes.

The project trip assignments (in PCE) for construction-related project traffic (workers, offsite delivery trucks, and onsite trucks), were added to the cumulative traffic volumes to derive the Cumulative plus Project traffic volumes.

Cumulative Impacts

Table 4.15-6, *Cumulative plus Project Conditions Level of Service Conditions*, shows the results of the Cumulative plus Project LOS analysis and provides a comparison to the cumulative (without project) conditions for the weekday peak hours using HCM methodology for unsignalized intersections and Caltrans intersections. Detailed LOS worksheets are included in Appendix K. Based on the appropriate significance criteria, all study area intersections are forecast to operate at LOS D or better in 2020 with the addition of the construction-related project traffic from both the solar generation sites and the gen-tie with the exception of SR-14/Purdy Avenue, which is forecast to operate at LOS E in the PM peak hour. Therefore, short-term cumulative construction impacts would be potentially significant at one study intersection.

Based on the appropriate significance criteria, all roadway segments are forecast to operate at LOS A/B or better with the addition of the construction-related project traffic in 2020. Therefore, cumulative construction impacts would be less than significant at the study roadway segments.

Cumulative impacts from the project, when considered with nearby, reasonably foreseeable planned projects, would occur only during project construction because project operation traffic would be very minimal. After construction, there would be minimal trip generation and less than significant cumulative impacts during operation of the project.

On the project-level (including the development of the gen-tie line), the proposed project would not include a design feature or utilize vehicles with incompatible uses that would create a hazard on the surrounding roadways with implementation of mitigation measures. And, implementation of mitigation measures would ensure the proposed project's contribution to emergency access and design hazards are reduced to a less than cumulatively considerable level.

Mitigation Measures

The SR-14/Purdy Avenue intersection (study intersection no. 2) is projected to operate at LOS E during the PM peak hour as a result of gen-tie construction traffic turning left onto SR-14 from Purdy Avenue. To improve the level of service at this intersection as a result of project traffic added to Cumulative Year (2020) conditions, Mitigation Measure MM 4.15-1 (see above) shall be implemented. Mitigation Measure MM 4.15-1 includes a requirement that the project proponent/operator shall put restrictions in place to shift some construction traffic away from this intersection and onto roadways/through intersections with higher capacities. As shown in **Table 4.15-7, *Mitigated Level of Service Conditions***, implementation of Mitigation Measure MM 4.15-1 would improve the PM peak hour LOS from LOS E to LOS D, thus mitigating the cumulative construction impact in 2020.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.15-1, impacts would be less than significant.

TABLE 4.15-6: CUMULATIVE PLUS PROJECT CONDITIONS LEVEL OF SERVICE CONDITIONS

Study Intersection	Cumulative		Cumulative plus Project		
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	Significant Impact?
1. Lone Butte Road/SR-58	LOS A	LOS A	LOS B	LOS B	No
2. SR-14/Purdy Avenue	LOS C	LOS C	LOS D	LOS E	Yes
3. SR-14 southbound ramps/Backus Road	LOS A	LOS A	LOS A	LOS B	No
4. SR-14 northbound ramps/Backus Road	LOS A	LOS A	LOS B	LOS B	No
5. Sierra Highway/Backus Road	LOS A	LOS A	LOS B	LOS A	No
6. Sierra Highway/Sopp Road	LOS A	LOS A	LOS B	LOS B	No

Study Roadway	Cumulative	Cumulative plus Project	
	Daily	Daily	Significant Impact?
Lone Butte Road			
• South of SR-58	LOS A/B	LOS A/B	No
• North of Trotter Avenue	LOS A/B	LOS A/B	No
United Street			
• Between Purdy Avenue and Reed Avenue	LOS A/B	LOS A/B	No
Sierra Highway			
• Between Silver Queen Road and Trotter Avenue	LOS A/B	LOS A/B	No
Holt Street			
• Between Purdy Avenue and Silver Queen Road	LOS A/B	LOS A/B	No
Purdy Avenue			
• East of SR-14	LOS A/B	LOS A/B	No
Oak Creek Road			
• Near Westwind and Windhub Substations	LOS A/B	LOS A/B	No
SR-14			
• North of SR-58	LOS A/B	LOS A/B	No
• Between SR-58 and Silver Queen Road	LOS A/B	LOS A/B	No
• Between Silver Queen Road and Backus Road	LOS A/B	LOS A/B	No

SOURCE: Dudek, 2019.

TABLE 4.15-7: MITIGATED LEVEL OF SERVICE CONDITIONS

Study Intersection	Cumulative plus Project		Cumulative plus Project with Mitigation	
	AM Peak	PM Peak	AM Peak	PM Peak
2. SR-14/Purdy Avenue	LOS D	LOS E	LOS D	LOS D

SOURCE: Dudek, 2019.

4.16.1 Introduction

This section of the EIR provides an assessment of potential impacts related to tribal cultural resources that could result from implementation of the proposed project. The analysis in this section is based on the *Cultural Resources Inventory and Evaluation for the Sanborn Solar Project* (Dudek, 2019) and results of the Native American consultation conducted by the County for purposes of compliance with CEQA requirements prompted by Assembly Bill (AB) 52, located in Appendix E1 of this EIR, respectively.

4.16.2 Environmental Setting

Existing Tribal Cultural Resources

Native American Correspondence and AB 52 Consultation

A Sacred Lands File (SLF) search was requested from the California Native American Heritage Commission (NAHC) for the proposed project on July 6, 2017. The NAHC responded via a letter dated July 26, 2017, stating that sacred sites were identified within the project site. The NAHC also provided a list of Native American groups affiliated with the project site to be contacted for additional information regarding tribal cultural resources. The SLF request and response from the NAHC are included as an appendix in the cultural resources study prepared for the proposed project (Dudek, 2019), included as Appendix E1 of this EIR.

On August 20, 2018, the County sent consultation notification letters via certified mail to Native American groups on the County's Master List pursuant to the requirements of AB 52 pertaining to government-to-government consultation. **Table 4.16-1, Summary of AB 52 Consultation Efforts**, summarizes the County's consultation efforts. To date, the County has received two responses, one from San Manuel Band of Mission Indians (San Manuel) and one from Twentynine Palms Band of Mission Indians (Twentynine Palms). In an email dated August 23, 2018, Ms. Jessica Mauck, Cultural Resources Analyst for San Manuel, stated that the project is not located within San Manuel's ancestral territory and that San Manuel would not request government-to-government consultation. In a letter dated September 19, 2018, Mr. Anthony Madrigal Jr., Tribal Historic Preservation Officer for Twentynine Palms, requested copies of cultural resources report prepared for the project and detailed maps of the project site, and stated he would issue recommendations upon reviewing the materials. In a letter dated August 29, 2019, the County responded to Mr. Madrigal's request and provided a copy of the cultural resources report prepared for the project and asked that Mr. Madrigal respond with comments within 30 days of receiving the letter. No response has been received from Twentynine Palms as of publishing the Draft EIR.

TABLE 4.16-1: SUMMARY OF AB 52 CONSULTATION EFFORTS

Individual Contacted	Tribe/Organization	Date Letter Mailed	Response Received
Michael Mirelez, Cultural Resources Coordinator	Torres Martinez Desert Cahuilla Indians	8/20/2018	No response
Ann Brierty, Cultural Resources Field Specialist	San Manuel Band of Mission Indians	8/20/2018	San Manuel responded in an email dated August 23, 2018 stating the project is not located within San Manuel's ancestral territory and San Manuel will not request consultation
Collin Rambo, Cultural Resource Management Technician	Tejon Indian Tribe	8/20/2018	No response
Anthony Madrigal Jr., Tribal Grants Administrator	Twentynine Palms Band of Mission Indians	8/20/2018	In a letter dated September 19, 2018, Twentynine Palms requested copies of cultural reports and detailed maps of the project site and stated he would issue recommendations upon reviewing the materials.
Darrell Mike, Tribal Chairman	Twentynine Palms Band of Mission Indians	8/20/2018	In a letter dated September 19, 2018, Twentynine Palms requested copies of cultural reports and detailed maps of the project site and would issues recommendations upon reviewing the materials.

4.16.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

Native American Heritage Commission

Public Resources Code (PRC) Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. Section 5097.98 of the PRC specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

Assembly Bill 52 and Related Public Resources Code Sections

AB 52 was approved by California State Governor Edmund Gerry “Jerry” Brown, Jr. on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074,

21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR) or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the CEQA *Guidelines*, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency’s formal notification and the lead agency must begin consultation within 30 days of receiving the tribe’s request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project’s impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to tribal cultural resources. There are no policies, goals, and implementation measures in the Kern County General Plan related to tribal cultural resources that are applicable to the project. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The implementation measure in the Mojave Specific Plan for cultural resources applicable to the project is provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 10. Implementation

H. Community Image

Implementation Measure

Measure H-4b: Prior to discretionary development of any individual project within the Specific Plan area, a complete records and literature search and/or a Phase 1 Assessment shall be conducted to identify the presence of any specific cultural resources and/or Native American sacred lands at the project site. Recommendations shall be incorporated into project approval.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. There are no goals, policies, or implementation measures in the West Edwards Road Settlement Specific Plan that are applicable to tribal cultural resources. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detail and refined manner unique to a smaller area of the County. Since there are no applicable goals, policies, or implementation measures within the West Edwards Road Settlement Specific Plan, refer to the applicable policies, goals, and implementation measures of the Kern County General Plan above.

4.16.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts to tribal cultural resources have been evaluated using a variety of resources, including an SLF search conducted by the NAHC. AB 52 notification letters were sent to Native American groups and individuals indicated by the NAHC to solicit information regarding the presence of tribal cultural resources. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project would have a significant impact on tribal cultural resources if it would:

- 1) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
 - a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or
 - b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Project Impacts

Impact 4.16-1a: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).

The SLF search conducted by the NAHC indicates the presence of sacred sites within the project site, but did not provide details on the specific location of the sites. The County's government-to-government

consultation efforts with interested Native American groups conducted pursuant to AB 52 did not result in any additional details or concerns regarding the sacred sites identified by the SLF search nor did it result in the identification of additional tribal cultural resources within the project site. Given that no tribal cultural resources have been identified within or immediately adjacent to the project site through AB 52 consultation, the project would not cause a substantial adverse change in the significance of a tribal cultural resource and no mitigation would be required.

Mitigation Measures

No mitigation would be required.

Level of Significance

There would be no impact.

Impact 4.16-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

As noted above, no tribal cultural resources were identified as part of the County's government-to-government notification and consultation efforts with interested Native American groups conducted pursuant to AB 52. Given that no tribal cultural resources have been identified within or immediately adjacent to the project site, the project would not cause a substantial adverse change in the significance of a tribal cultural resource and no mitigation would be required.

Mitigation Measures

No mitigation would be required.

Level of Significance

There would be no impact.

Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts that the project discussed in Chapter 3, *Project Description*, of this EIR, would have on tribal cultural resources. The geographic area of analysis for tribal cultural resources includes the Antelope Valley. This geographic scope of analysis is appropriate because the resources within this area are expected to be similar to those that occur on the project area because of their proximity, their similarities in environments and landforms, and their location within the same Native American tribal territories. This is a large enough area to encompass any effects of the project on tribal cultural resources that may combine with similar effects caused by other projects, and provides a reasonable context wherein cumulative actions could affect tribal cultural resources.

Multiple projects, including solar energy production facilities, are proposed throughout the Antelope Valley. Cumulative impacts to tribal cultural resources in the Antelope Valley could occur if other related projects, in conjunction with the proposed project, had or would have impacts on cultural resources that, when considered together, would be significant.

Potential impacts of the project to tribal cultural resources, in combination with other projects in the area, could contribute to a cumulatively significant impact due to the overall loss of resources unique to the region. However, as discussed above, no tribal cultural resources have been identified in the project area and the project would not have an impact on tribal cultural resources. Therefore, the project would not have a cumulatively considerable contribution to impacts to tribal cultural resources.

Mitigation Measures

No mitigation would be required.

Level of Significance

There would be no impact.

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4.17.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of the project pertaining to demand for operational utilities (water, stormwater control, wastewater, and solid waste disposal). This section describes existing infrastructure and levels of service and evaluates whether any improvements are necessary to accommodate the project. Information in this section is based primarily on the Water Supply Assessment (Appendix L1) (Dudek, 2018a), the Hydrology and Water Quality Technical Report (Appendix I) (Dudek, 2018b), and a Will-Serve Letter provided by the Mojave Public Utility District (Appendix L2) (MPUD, 2019).

4.17.2 Environmental Setting

Water Supply

There are typically three sources of supply water: (1) natural sources; (2) manmade sources; and (3) reclamation. Natural sources include rivers, lakes, streams, and groundwater stored in aquifers. Manmade sources include runoff water that is treated and stored in reservoirs and other catchment structures. Reclaimed water is wastewater that has been conveyed to a treatment plant and then treated to a sufficient degree that it may again be used for certain uses (such as irrigation). However, reclaimed water is not potable (drinkable) and must be conveyed in a separate system in order to ensure that there is no possibility of direct human consumption.

The project site is located in an unincorporated part of Kern County within the boundaries of the Antelope Valley-East Kern Water Agency (AVEK) service area, which is within the Fremont Valley Groundwater Basin (FVGB). AVEK is a wholesaler of State Water Project (SWP) supplies to potable water purveyors, such as the Mojave Public Utility District (MPUD), and a retail provider of untreated SWP supplies to agricultural users (AVEK, 2016). While the project site is within the boundaries of AVEK, there is no public water system that currently supplies water to the project site or general area. However, AVEK has two underground Cement Mortar-lined and Coated (CML&C) Transmission Pipelines, one 36-inch transmission pipeline running east-west along Silver Queen Road and east of 20th Street, located approximately 0.5 miles south of the northern site, crossing the gen-tie study area along 20th Street; and one 18-inch transmission pipeline running north-south on the west side of State Route 14 located approximately 1.4 miles west of the northern site, crossing the gen-tie study area along Purdy Avenue. The project site is located on unincorporated lands away from any urban areas and, therefore, is not covered by an active Urban Water Management Plan.

The project site is not located within the service area of a public water system; however, it is located within the service area of a local water wholesaler, AVEK, who MPUD can rely upon as a source of supplementary water in addition to that it produces from groundwater wells within its service area.

The project site is currently undeveloped open space that has been historically used for grazing operations and before that, alfalfa cultivation (Dudek, 2018a). There are no existing water demands onsite and the native vegetation subsists on natural rainfall.

Groundwater Supply

The project site is located in eastern Kern County at the southern end of the FVGB. The Basin covers an estimated 336,700 acres (526 square miles) and is bounded to the south and southeast by the Antelope Valley Groundwater Basin (AVGB); to the east by crystalline rocks of Red Mountain, the Rand Mountains, Castle Butte, the Bissell Hills, and the Rosamond Hills; and to the west and north by the Sierra Nevada Mountains, the Tehachapi Mountains, and the El Paso Mountains (Dudek, 2018a). The boundary between the FVGB and the AVGB occurs along a groundwater divide approximated by a line connecting the mouth of Oak Creek through Middle Butte to the exposed basement rock near Gem Hill and to the southeast of California City (Dudek, 2018a; 2018b), approximately 12 miles east of the southern project site.

Groundwater has been and is an important resource within the Antelope Valley given limits on the available local and imported surface water supply. Anthropogenic groundwater extractions have exceeded the Basin's natural recharge since the 1920s, and have resulted in ground subsidence in some areas (AVIRWMG, 2013). For a discussion of Basin characteristics, please refer to Section 4.10, *Hydrology and Water Quality*, of this Draft EIR.

Groundwater Basin Adjudication

Prior to the California Sustainable Groundwater Management Act (SGMA), the primary method for solving groundwater disputes and protecting groundwater basins was litigation. When over-pumping led to a crisis like seawater intrusion or chronic overdraft, people had little choice but to file a lawsuit—called an adjudication—in which all rights to water in a basin could be defined by a court. SGMA now ensures that basins can be managed sustainably through local management plans. In October 2015, Governor Brown signed Assembly Bill No. 1390, which is legislation that provides a comprehensive adjudication process for all groundwater basins that are regulated under the SGMA. Groundwater basins that have been adjudicated by court decision are subject to management by a court-approved Watermaster.

In May 2011, the California superior court issued an official decision determining that the adjudication area is in a State of overdraft, and established a safe yield for the AVGB of 110,000 acre-feet per year (AFY), although pumping in the area has ranged up to 150,000 AFY. Based on the determined safe yield and the amount that was previously pumped, the 2010 Integrated Urban Waste Management Plan (UWMP) for the Antelope Valley, dated June 2011, predicted that annual entitled water rights/amounts could be reduced by as much as 35 percent by the adjudication.

On December 23, 2015, Judge Komar issued a final judgment that set in motion court-directed procedures for on the Directors of the AVEK to create a Watermaster Organization empowered to monitor the groundwater basin. In their first meeting of the year following settlement of long-running litigation over water rights adjudication, AVEK, as directed by the court, took action to begin the Watermaster transition process. The judgment specifies that AVEK and Los Angeles County Waterworks District 40 each occupy a seat, along with another public water supplier to be named later.

The judgment confirmed that the Basin is in overdraft and promulgated regulations and procedures to govern groundwater usage in the Basin. It defined Classes of groundwater pumpers, two of which may include groundwater sources for this project – a Non-Pumper Class and a Small Pumper Class. It defined a multi-party 'Water Master' to oversee continuing implementation of the judgment and directed the appointment by the Watermaster of a Water Engineer, defining his duties. The Watermaster and a Water Engineer are in place and are enforcing and implementing the Adjudication.

Any use of groundwater in the Basin, which includes multiple individual parcels, must be compliant with the Adjudication Judgment, and coordinated with the Watermaster as required.

In contrast, to the AVGB, the FVGB is not subject to a court adjudication. Based on low population density, negative growth projections, low numbers of private and public supply wells, and the lack of irrigated agriculture within the FVGB, it is designated as a low-priority basin by the California Department of Water Resources (DWR). As a low-priority basin, the FVGB is not required to develop a groundwater sustainability plan in accordance with the SGMA and there is no existing groundwater management plan applicable to the basin. Groundwater pumping within the FVGB peaked in the 1950s with the cultivation of agricultural crops such as alfalfa, pasture, and field crops, then declined as greater pumping lifts and increasing energy costs made the use of groundwater in the area less economical for agricultural uses. The delivery of SWP water to the region starting in 1972 also decreased farmers' reliance on groundwater for irrigation. Agriculture within the FVGB largely ceased by the late 1970's. Groundwater within the FVGB is currently extracted to support domestic, industrial, renewable energy, and limited municipal demands (Dudek, 2018a).

Wastewater

The Kern Sanitation Authority (KSA) provides maintenance and wastewater service for Kern County. As the project site is currently undeveloped, there are no known septic systems or infrastructure within the project site boundary. Any wastewater generation occurring within the project site would be collected within individual septic systems that would have to be emptied as part of regular ongoing project-related maintenance.

Stormwater Drainage

As stated previously, the project site is not and has never been developed, with the exception of a few dirt roads present and two abandoned concrete pads. Therefore, all stormwater drainage onsite follows natural drainage patterns on the land surface. On the project site and in the surrounding area, ephemeral drainages convey stormwater from the Tehachapi Mountain foothill areas to the desert floor. During rainfall events that produce overland flow, runoff concentrates in the defined channels of the Tehachapi Mountains and/or stormwater conveyance systems within/around the Town of Mojave, through the project site, and into Rogers Dry Lake, an endorheic basin (i.e., an enclosed basin with no drainage outlet) 12 miles east of the project site (Dudek, 2018b).

Stormwater drainage within the project site are limited to poorly defined/shallow swales and discontinuous ephemeral channels primarily located along the medians of paved roads, within unmaintained dirt roads, and alongside the railroad embankment separating the northern and southern project site. Throughout the project site, drainage features are scattered and discontinuous. This suggests a natural tendency for surface runoff events to be both brief and infrequent, with rapid infiltration into the sandy substrate, and/or shallow ponding in low-lying areas quickly followed by high evaporation.

Figure 4.17-1, *Project Site Hydrologic Setting*, shows areas where the terrain has caused surface flows to be impounded in small ephemeral playas. A well-defined continuous channel does not take shape until approximately 1.5 miles downstream from the project site's easternmost boundary. This channel parallels Mojave Boulevard until it reaches the community of Edwards Air Force Base where flow is conveyed through drainage ditches paralleling streets until it reaches Rogers Dry Lake.

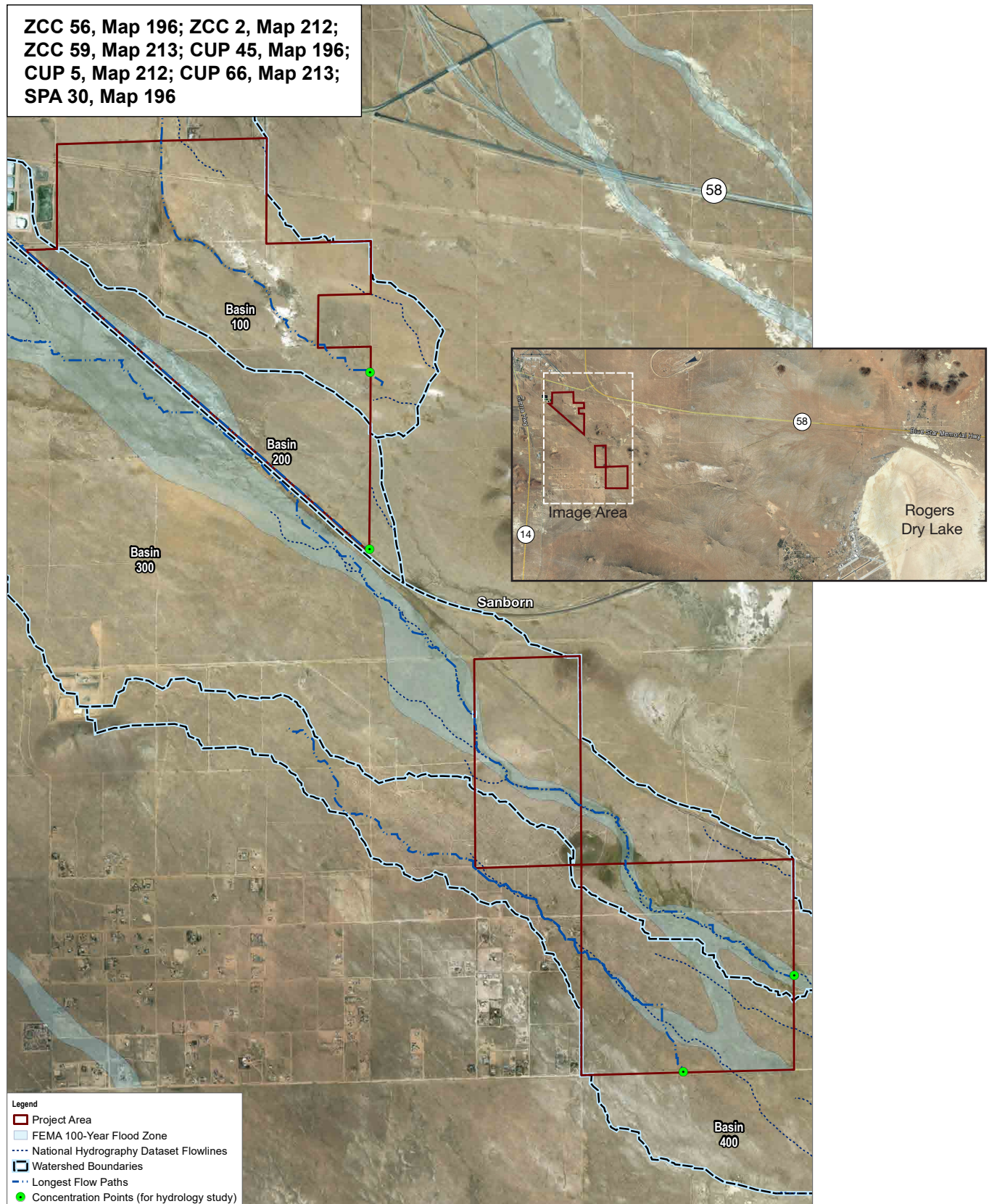


FIGURE 4.17-1: PROJECT SITE HYDROLOGIC SETTING

Solid Waste

Solid waste generally refers to garbage, refuse, sludge, and other discarded solid materials that come from residential, industrial, and commercial activities. Construction, demolition, and inert wastes are also classified as solid waste. Such wastes include nonhazardous building materials such as asphalt, concrete, brick, drywall, fencing, metal, packing materials, pallets, pipe, and wood. The general waste classifications used for California waste management units, facilities, and disposal sites are outlined below. Nonhazardous solid waste consists of organic and nonorganic solid, semi-solid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semi-solid wastes, and other discarded waste, provided that such wastes do not contain hazardous materials or soluble pollutants in concentrations that would exceed applicable water quality objectives or cause a degradation of waters of the State.

California State law regulates the types of waste that can be disposed of at the different classes of landfills. Class I landfills may accept hazardous and nonhazardous wastes. Class II landfills may accept designated and nonhazardous wastes, and Class III landfills may accept nonhazardous wastes.

Landfills

The Kern County Public Works Department operates seven active landfills throughout the County. Landfills are located in Bakersfield, Boron, Mojave-Rosamond, Ridgecrest, Shafter-Wasco, Taft, and Tehachapi. Although no solid waste is generated at the project site, the closest operational landfill to the project site is the Mojave-Rosamond Recycling and Sanitary Landfill, located approximately 1.7 miles to the west of the southern project site and approximately 1.5 miles from the northern project site. This Class III landfill accepts wastes from construction and demolition, agricultural, industrial and mixed municipal sources (CalRecycle, 2019a). The other nearby landfill is the Tehachapi Sanitary Landfill, which is located approximately 13 miles northwest of the northern project site and approximately 16 miles northwest of the southern project site. The Tehachapi Sanitary Landfill is located in Tehachapi, over the Tehachapi Mountains. The Tehachapi Sanitary Landfill is also a Class III Landfill (CalRecycle, 2019b). The location of the landfills expected to serve the proposed project, their capacity, and their anticipated closure dates are presented in **Table 4.17-1, Summary of Kern County Public Works Landfills**.

TABLE 4.17-1: SUMMARY OF KERN COUNTY PUBLIC WORKS LANDFILLS

Landfill	Maximum Permitted Capacity	Remaining Capacity (cubic yards)	Maximum Permitted Throughput (tons/day)	Anticipated Year of Closure
Mojave-Rosamond 400 Silver Queen Rd., Mojave	78,000,000	76,310,297	3,000	2123
Tehachapi 12001 Tehachapi Blvd., Tehachapi	4,000,000	522,298	1,000	2020
SOURCE: CalRecycle, 2019a; CalRecycle, 2019b.				

Electricity, Natural Gas, and Telecommunications

No electricity, natural gas, nor telecommunication facilities are currently located on the project site. Natural gas pipelines and AT&T fiber optic lines run along the northern portion of the project site. Southern California Edison (SCE) operates existing 12 kV distribution facilities in the project area along with larger facilities consisting of the 500 kV SCE Tehachapi Renewable Transmission Project, SCE Whirlwind Substation, and SCE Windhub Substation. There are no natural gas pipelines or telecommunication facilities on the project site. SoCalGas is the natural gas provider in this area of Kern County.

4.17.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Energy Commission

The California Energy Commission (CEC) is the state's primary energy policy and planning agency. Created in 1974, the CEC has five major responsibilities: forecasting future energy needs and keeping historical energy data, licensing thermal power plants 50 megawatts (MW) or larger, promoting energy efficiency through appliance and building standards, developing energy technologies and supporting renewable energy, and planning for and directing the state response to energy emergencies.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. In 1911, the CPUC was established by Constitutional Amendment as the Railroad Commission. In 1912, the Legislature passed the Public Utilities Act, expanding the Commission's regulatory authority to include natural gas, electric, telephone, and water companies as well as railroads and marine transportation companies. In 1946, the Commission was renamed the California Public Utilities Commission. It is tasked with ensuring safe, reliable utility service is available to consumers, setting retail energy rates, and protecting against fraud.

California Department of Resources Recycling and Recovery

California Department of Resources Recycling and Recovery (CalRecycle) is the State agency designated to oversee, manage, and track California's 76 million tons of waste generated each year. It is one of the six agencies under the umbrella of the California Environmental Protection Agency. CalRecycle administers and provides oversight for all of California's State-managed non-hazardous waste handling and recycling program. CalRecycle provides training and ongoing support for local enforcement agencies that regulate and inspect California's active and closed solid waste landfills (CalRecycle, 2019c).

State Water Resources Control Board and Regional Water Quality Control Board

The primary responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). The SWRCB sets statewide policy for the implementation of state and federal laws and regulations. The RWQCBs adopt and implement Water Quality Control Plans (Basin Plans), which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities. The project site is within the jurisdiction of the Lahontan RWQCB.

California Department of Water Resources

The DWR is responsible for protecting, conserving, developing, and managing much of California's water supply. These duties include: preventing and responding to floods, droughts, and catastrophic events; informing and educating the public on water issues; developing scientific solutions; restoring habitats; planning for future water needs, climate change impacts, and flood protection; constructing and maintaining facilities; generating power; ensuring public safety; and providing recreational opportunities.

Integrated Solid Waste Management Act of 1989 or Assembly Bill 939

Pursuant to the California Integrated Solid Waste Management Act of 1989 (Public Resources Code [PRC] Section 40050 et seq.) or Assembly Bill (AB) 939, all cities in California are required to reduce the amount of solid waste disposed in landfills. AB 939 required a reduction of 25 percent by 1995 and 50 percent by 2000. Contracts that include work that will generate solid waste, including construction and demolition debris, have been targeted for participation in source-reduction, reuse, and recycling programs. The contractor is urged to manage solid waste generated by the work to divert waste from disposal in landfills (particularly Class III landfills) and maximize source reduction, reuse, and recycling of C&D debris.

Assembly Bill 341

Since the passage of AB 939, diversion rates in California have been reduced to approximately 65 percent, the statewide recycling rate is approximately 50 percent, and the beverage container recycling rate is approximately 80 percent. In 2011, the State passed AB 341, which established a policy goal that a minimum of 75 percent of solid waste must be reduced, recycled, or composted by the year 2020. The State provided the following strategies to achieve that 75 percent goal:

1. Moving organics out of the landfill;
2. Expanding the recycling/manufacturing infrastructure;
3. Exploring new approaches for state and local funding of sustainable waste management programs;
4. Promoting state procurement of post-consumer recycled content products; and
5. Promoting extended producer responsibility.

To achieve these strategies, the State recommended legislative and regulatory changes including mandatory organics recycling, solid waste facility inspections, and revising packaging. With regard to construction and demolition, the State recommended an expansion of California Green Building Code standards that

incentivize green building practices and increase diversion of recoverable construction and demolition materials. Current standards require 50 percent waste diversion on construction and some renovation projects, although this may be raised to 65 percent for nonresidential construction in upcoming changes to the standards. The State also recommends promotion of the recovery of construction and demolition materials suitable for reuse, compost or anaerobic digestion before residual wastes are considered for energy recovery.

Senate Bills 610 and 221

Passed in 2001, Senate Bill (SB) 610 and SB 221 are companion measures that seek to promote more collaborative planning among local water suppliers and cities and counties. They require that water supply assessment occur early in the land use planning process for all large-scale development projects. If groundwater is the proposed supply source, the required assessments must include detailed analyses of historic, current, and projected groundwater pumping and an evaluation of the sufficiency of the groundwater basin to sustain a new project's demands. They also require an identification of existing water entitlements, rights, and contracts and a quantification of the prior year's water deliveries. In addition, the supply and demand analysis must address water supplies during single and multiple dry years presented in five-year increments for a 20-year projection. In accordance with these measures, a WSA was prepared for the proposed project as it is an industrial use of more than 40 acres (California Water Code, Section 10912).

California Solid Waste Reuse and Recycling Access Act of 1991 or Senate Bill 1327

The California Solid Waste Reuse and Recycling Access Act of 1991 (PRC Chapter 18) identified a lack of adequate areas for collecting and loading recyclable materials, resulting in a significant impediment to diverting solid waste. This act requires State and local agencies to address access to solid waste for source reduction, recycling, and composting activities. Each local agency must adopt an ordinance related to adequate areas for collecting and loading recyclable materials for development projects.

California Water Code Section 13260

California Water Code Section 13260 requires any person who discharges waste, other than into a community sewer system, or proposes to discharge waste that could affect the quality of waters of the State to submit a report of waste discharge to the applicable Regional Water Quality Control Board (RWQCB). Any actions of the projects that would be applicable under California Water Code Section 13260 would be reported to the Lahontan RWQCB. However, the proposed project is not expected to discharge waste into the local sewer system, and therefore, is not required to prepare and submit the described report.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to utilities and service systems. The policies and implementation measures in the Kern County General Plan related to utilities and service systems that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures

that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

California Green Building Code

As part of compliance with the State of California Green Building Code Requirements (known as CALGreen) that took effect beginning January 2011, Kern County implemented the following construction waste diversion requirements:

- Submittal of a Construction Waste Management Plan prior to project construction for approval by the Kern County Building Department;
- Recycling and/or reuse of a minimum 50 percent of construction & demolition waste; and
- Recycling or reuse of 100 percent of tree stumps, rocks and associated vegetation and soils resulting from land clearing.

Kern County Integrated Waste Management Plan

The Kern County Public Works Department is required by the State to plan and implement waste management activities and programs in the County unincorporated area to assure compliance with AB 939 and subsequent State mandates. The Kern County IWMP includes a Reduction and Recycling Element, Household Hazardous Waste Element, and Non-disposal Facility Element. The Plan was approved February 1998 by the California Integrated Waste Management Board (now California Department of Resources Recycling and Recovery or CalRecycle). The Kern County IWMP is the long-range planning document for landfill facilities.

Antelope Valley Integrated Regional Water Management Plan

The Antelope Valley Integrated Regional Water Management Plan (IRWMP) is a joint water planning effort aimed at ensuring water supply reliability for the Antelope Valley Region, undertaken by agencies which joined to form a Regional Water Management Group, including the following: AVEK Water Agency, Antelope Valley State Water Contractors Association, City of Lancaster, City of Palmdale, Littlerock Creek Irrigation District, Los Angeles County Sanitation District Nos. 14 and 20, Los Angeles County Waterworks District No. 40, Palmdale Water District, Quartz Hill Water District, and Rosamond Community Services District. These agencies have collectively defined a water resource management plan in the Antelope Valley IRWMP, which describes a course of action to meet the expected demands for water within the entire Antelope Valley Region through 2035.

The primary goals of the Antelope Valley IRWMP are to address the following:

- How municipal and industrial (M&I) purveyors can reliably provide the quantity and quality of water that will be demanded by a growing population;
- Options to satisfy agricultural users' demand for reliable supplies of reasonable cost irrigation water; and
- Opportunities to protect and enhance the current water resources (including groundwater) and the environmental resources within the Antelope Valley Region (AVRWMG, 2013).

The proposed project site is technically located within the planning area for the Antelope Valley IRWMP. However, the focus of the plan is on the Antelope Valley rather than the Fremont Valley, because the Antelope Valley Groundwater Basin is subject to the court adjudication for groundwater rights, is under greater development pressure, and is expected to face greater challenges with respect to water supply than the northern portion of the IRWMP area within the Fremont Valley.

Antelope Valley-East Kern Water Agency Urban Water Management Plan

The AVEK Water Agency adopted an updated UWMP in 2016. AVEK delivers California SWP water used by customers in lieu of or in addition to local groundwater resources. AVEK constructed potable groundwater wells in 2015. Delivery of SWP can be unreliable and is dependent upon multiple factors such as climatic variations and other users of SWP water; therefore, to ensure water supply reliability, AVEK has established use of supply enhancement programs such as groundwater banking in the Antelope Valley Groundwater Basin and conjunctive water use (AVEK, 2016).

The project area is located within AVEK's service area, which is a wholesale water supplier to utilities and local government agencies, including MPUD and California City. Therefore, the project area is addressed in the UWMP of the wholesaler. MPUD is included in the 2015 AVEK UWMP, and was given an expected future allocation from AVEK of 90 AFY through 2035 (AVEK 2016).

Kern County Public Works Department Recycling Programs

The Kern County Public Works Department administers or sponsors the following recycling programs, which contribute toward meeting State-mandated solid waste diversion goals to achieve 75 percent recycling, composting, or source reduction of solid waste by 2020:

- Recycling programs at landfills to recycle or divert a wide variety of products, such as wood waste, cathode ray tubes, tires, inert materials, appliances, etc.;
- Drop-off recycling centers for household recyclables. The County- and the City-operated drop-off recycling centers, which are located in the unincorporated metropolitan area and the city, may be used by both County and city residents;
- Financial assistance for operation of the City of Bakersfield Green Waste Facility;
- The Kern County Special Waste Facility for the disposal of household hazardous waste. Services are provided to all Kern County residents;
- Semi-annual "bulky waste" collection events, which are held in the Bakersfield area and available to both County and city residents (co-sponsor);
- Christmas tree recycling campaign (participates jointly with the City of Bakersfield);
- Telephone book recycling program (co-sponsors with Community Clean Sweep);
- Community Clean Sweep summer workshops called "Trash to Treasure," which educate children about recycling and other Kern County Waste Management Department programs (sponsor);
- An innovative elementary school program called the "Clean Kids Hit the Road Puppet Show" (operates in collaboration with Community Clean Sweep); and
- Recycling trailers for churches, schools, and nonprofit organizations.

Kern County General Plan

1.4. Public Facilities and Services

Policies

- Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.
- Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.
- Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Implementation Measures

- Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.
- Measure D: Involve utility providers in the land use and zoning review process.

1.10. General Provisions, 1.10.1. Public Services and Facilities

Policies

- Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.
- Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Implementation Measures

- Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.
- Measure D: Involve utility providers in the land use and zoning review process.
- Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater

quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

Mojave Specific Plan

The Mojave Specific Plan was drafted in 2003 for the unincorporated eastern Kern County community of Mojave. The plan provides guidance on public utilities and related services. Objectives and policies of the plan that are relevant to the proposed project are included below.

Chapter 3. Land Use Element

Objectives

Objective 3.6: Ensure that public services and utilities are provided commensurate with established needs and projected growth.

Policies

Policy 3.6.2: Coordinate with the Mojave Public Utility District, County Sheriff's Department, County Library Department and County Fire Department to ensure sufficient services are provided to community residents and businesses.

Policy 3.6.4: Work with service providers to facilitate and encourage modifications and improvements to existing water, sewer, drainage, electric, natural gas, and other utility systems.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan was certified in 1992 for the community of West Edwards Road Settlement in order to recognize existing development and prepare for projected community growth. The plan includes the following elements: land use, open space, and conservation; circulation; and safety. Policies and implementation measures of the plan that are relevant to the proposed project are included below.

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

Policies

Policy 1.1.3.3: Development shall occur outside areas identified as primary floodways. All development projects will incorporate measures to ensure that the proposed project will not be hazardous, increase flood depths or velocities, or cause water quality to deteriorate. Developments which would be hazardous to the public health and safety will be prohibited.

Policy 1.2.3.1: New development shall be required to pay its proportional share of the costs of local infrastructure improvements such as public streets, and water and sewer systems.

Policy 1.2.3.1: Development shall be encouraged to utilize existing utility purveyors.

Implementation Measure

Measure 1.1.4.3: Drainage improvement plans shall be approved for projects pursuant to the Kern County Zoning Ordinance.

Chapter 4. Safety Element***Policy***

Policy 4.1.3.2: New development will be allowed only when it can meet standard levels of service from fire and water service delivery systems.

Implementation Measures

Measure 4.1.4.3: All new development shall provide for the containment of drainage water generated on site. Drainage plans must meet the approval of the Kern County Public Works Department.

Measure 4.1.4.4: Prior to the issuance of building or grading permits, all development plans will need approval of Kern County Department of Planning and Development Services/Floodplain Management Section.

4.17.4 Impacts and Mitigation Measures

Methodology

Potential impacts to water supply, wastewater, and stormwater associated with construction and operation of the proposed project were evaluated qualitatively and quantitatively using the Water Supply Assessment (Appendix L1) (Dudek, 2018a), the Hydrology and Water Quality Technical Report (Appendix I) (Dudek, 2018b), and a Will-Serve Letter (Appendix L2) (MPUD, 2019). In addition, current data obtained from the Kern County and State of California about the capacity of landfills was used to identify potential solid waste impacts. The evaluation of impacts is based on professional judgment, analysis of the County's land use policies, and significance criteria established in Appendix G of the CEQA *Guidelines*, which the County has determined appropriate for the EIR.

Thresholds of Significance

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

A project could have a significant adverse effect on utilities and service systems if it would:

- a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;

- b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
- c. Result in a determination by the waste water treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals;
- e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste;

The lead agency determined in the Notice of Preparation/Initial Study (NOP/IS) 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 EIR. Please refer to Appendix A of this EIR for a copy of the NOP/IS and additional information regarding these issue areas.

- c. Result in a determination by the waste water treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

As detailed in the NOP/IS, the project would generate an insubstantial volume of wastewater. Wastewater produced during construction would be collected in portable toilet facilities and disposed of at an approved facility. During operation, there would be six permanent operations employees onsite, which would require potable water to be provided by bottled water trucked onsite or from groundwater resources, wastewater disposed of through an onsite septic system, 12 kV power, natural gas and telecommunications for the operations and maintenance facility. The O&M facility would likely use a heat pump for heating and cooling via use of electricity generated onsite or from the local electric utility grid; however, the ability to use natural gas for heating and cooling has been included for a worst-case assumption. Water for panel washing would be brought in by trucks. Therefore, minimal wastewater would be generated and the project would not exceed wastewater treatment requirements of the Lahontan RWQCB. Impacts would be less than significant and no further analysis for these issues areas is warranted in the EIR.

Project Impacts

Impact 4.17-1: The project would require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Construction

Water

The proposed project would require an estimated 200 acre feet (AF) of water over an 18-month construction period. Therefore, the yearly water demand for the entire project is assumed to be 133 AFY $([200 \text{ AF} / 18 \text{ Months}] \times 12)$ for common construction related purposes, including but not limited to grading and soil compaction dust suppression, concrete manufacturing, truck wheel washing, equipment washing, and fire

safety (Dudek, 2018a). Water required during construction would be supplied by an offsite or onsite well that would draw from the FVGB with authorization of the MPUD (Dudek, 2018a); well water is not expected to require treatment for construction use. For these reasons, the proposed project would not require or result in the construction of new water facilities, which could cause significant environmental effects; thus, impacts during construction would be less than significant.

Wastewater Treatment

Construction of the project would generate a minimal volume of wastewater. During construction activity, wastewater would be contained within portable toilet facilities and disposed of at an approved disposal site. The Kern County Environmental Health Services Division is responsible for monitoring the use of portable toilet facilities, and a condition of approval would require the project proponent to provide documentation of a portable toilet pumping contract. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed; thus, impacts during construction would be less than significant.

Stormwater Drainage

Water used during construction would runoff into drainage features on the project site, which, as previously mentioned, are scattered and discontinuous. As a result, surface runoff events would generally be brief and infrequent, with rapid infiltration into the sandy substrate, and/or shallow ponding in low-lying areas quickly followed by high evaporation (Dudek, 2018b). Nonetheless, as described in Section 4.7, *Geology and Soils*, of this Draft EIR, Mitigation Measure MM 4.7-3 would require the implementation of a Stormwater Pollution Prevention Plan (SWPPP) during construction, which would include best management practices (BMPs) designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality. There are no constructed stormwater drainage systems present onsite and stormwater on the project site either percolates onsite or drains offsite by way of existing ephemeral drainages. Project activities during construction are not expected to substantially alter the ground surface such that new stormwater drainage facilities are needed. No offsite connections to a municipal storm water facility exist or are proposed; thus, impacts during construction would be less than significant.

Electrical Power

The proposed project would likely require the use of 12 kV distribution power for the onsite laydown yard during construction activities. SCE operates 12 kV distribution circuits in the project area. The project applicant would coordinate with SCE to obtain access to a nearby 12 kV distribution circuit. The improvements needed to interconnect into the 12 kV distribution circuit would occur within the proposed development footprint. The proposed project would not require or result in the construction of new electrical facilities, which could cause significant environmental effects; thus, impacts during construction would be less than significant.

Natural Gas

Natural gas would not be required to support construction activities. No offsite natural gas connections are proposed during construction; thus, impacts during construction would be less than significant.

Telecommunication Facilities

Telecommunications via fiber optic lines would not be required to support construction activities. Telecommunications would be supported by satellite and cellular service during construction. No offsite telecommunication connections are proposed during construction; thus, impacts during construction would be less than significant.

Operation

Water

During project operation, quarterly panel washing activities are expected to generate a long-term operational water demand of 30 AFY for the entire project site. Water for panel washing is expected to come from the Mojave Public Utility District or wells installed as part of the proposed project during construction, which would draw from the FVGB. Well water is not expected to require treatment and could be pulled directly from the well for operational use. As discussed above, installation of these wells would be installed in accordance with Kern County standards and requirements and, thus, would not result in impacts. For these reasons, the proposed project would not require or result in the construction of new water facilities which could cause significant environmental effects; thus, impacts during operations and maintenance would be less than significant.

Wastewater Treatment

The proposed project would include an onsite private septic system to treat wastewater from the operation and maintenance facility. Wastewater generated is expected to be minimal from the six onsite employees and would not require connection to a wastewater treatment provider. With Kern County Health Department review and oversight, installation, operation, and decommissioning of the onsite septic systems would not violate any wastewater treatment requirements of the applicable RWQCB. Therefore, impacts would be less than significant.

Stormwater Drainage

As previously mentioned, there are no constructed stormwater drainage systems present onsite. Project activities during operation are not expected to substantially alter the ground surface such that new stormwater drainage facilities are needed. As discussed in Section 4.10, *Hydrology and Water Quality*, of this Draft EIR, Mitigation Measure MM 4.10-1 would be implemented as a part of the proposed project and requires preparation of a drainage plan to reduce potential increases in stormwater runoff onsite and would detail any necessary physical structures required to control stormwater. Per Mitigation Measure MM 4.10-1, no wells would be located in existing drainage onsite, thereby enabling these drainages to continue to naturally drain stormwater from the site unobstructed. These structures would be developed onsite along with the rest of project construction. No offsite disposal connections to a municipal storm water facility exist or are proposed; thus, impacts during operation and maintenance would be less than significant.

Electrical Power

The proposed project would likely require the use of 12 kV distribution power for the onsite operation and maintenance facility during operational activities if power generated onsite is not utilized. SCE operates 12 kV distribution circuits in the project area. The project applicant would coordinate with SCE to obtain access to a nearby 12 kV distribution circuit. The proposed project would not require or result in the

construction of new electrical facilities which could cause significant environmental effects; thus, impacts during operation and maintenance would be less than significant.

Natural Gas

Natural gas could be required to support the operation and maintenance facility heating and cooling. It is likely a heat pump would be used for heating and cooling; however, a worst-case assumption that natural gas would be utilized has been included for environmental review purposes. Natural gas connections are available along the northern limits of the proposed project. The proposed project would not require or result in the construction of new gas facilities which could cause significant environmental effects; thus, impacts during operation and maintenance would be less than significant.

Telecommunication Facilities

Telecommunications via fiber optic lines would likely be required to support operation and maintenance facilities. Telecommunications would be supported by fiber optic lines installed along the gen-tie transmission poles and/or via connections to local telecommunication lines within the project area. No offsite telecommunication connections are proposed during operation and maintenance located beyond the development footprint; thus, impacts during operation and maintenance would be less than significant.

Mitigation Measures

Implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1 would be required (see Section 4.7, *Geology and Soils*, and Section 4.10, *Hydrology and Water Quality*, for text of Mitigation Measures MM 4.7-3 and MM 4.10-1, respectively).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1, impacts would be less than significant.

Impact 4.17-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

The MPUD and/or onsite wells would supply the proposed project with water for both its construction demand and operational demand (MPUD, 2019). The MPUD has used a hydrant located along United Street at the southern end of its service area, as well as through non-potable well (Well 30) located on Lone Butte Road, to provide for the construction-related demands of renewable energy projects in the region. MPUD would provide water to the project site through purchasing water, as available, from AVEK, and selling it to the project proponent through the hydrant, or by making non-potable Well 30 available for use during the construction phase. Based on communication with MPUD, MPUD would have sufficient water supplies to support the proposed project on its own, without use of the AVEK connection. Well 30 is currently a non-potable well located immediately north of the site's northern border along Lone Butte Road and is expected to be converted to a potable supply well in 2020 and become part of MPUD's treated water supply (Dudek, 2018a).

Water requirements for the project during construction and operation were determined in the Water Supply Assessment prepared for the project (see Appendix L1 of this Draft EIR). The project's construction water demand is estimated to be 133 AFY for an 18-month construction period and approximately 30 AFY for

the entire project site throughout the anticipated life of the project (approximately 35 years). Bottled potable water for drinking and domestic use during construction, operation, and decommissioning would be trucked in to the project site. The water required during decommissioning is unknown at present, but is to be similar to construction water demands. Non-potable water required during construction, operation, and decommissioning would be supplied by the MPUD through Well 30, which draws its water from the FVGB. The will-serve letter response provided by the MPUD on September 5, 2019 states that the MPUD would provide construction water for the proposed project for up to two years and 30 AFY for ongoing operations for the entire project site (MPUD, 2019). The project site is located within the FVGB; as described above, there is no adjudication process for the FVGB as it is designated as a low-priority basin by the DWR. The FVGB is not currently in overdraft and recharge estimates of 2.5 percent of average rainfall into the upper aquifer are sufficient to meet groundwater demand. Extraction of groundwater from the FVGB is currently 4,095 AFY, with MPUD extracting 467 AFY (Dudek, 2018a).

Additionally, according to the Water Supply Assessment prepared for the project, California City has a large surplus of available groundwater, and has indicated its willingness to supply construction water for the project. **Table 4.17-2, Water Supply and Demand Comparison for Present through 2040**, compares the available supply for construction and operation for average, single-dry and multiple-dry water years to the project demand.

TABLE 4.17-2: WATER SUPPLY AND DEMAND COMPARISON FOR PRESENT THROUGH 2040

Available Sources	Construction (2019–2020) for the Entire Project Site			Operation and Maintenance (2020– 2040) for the Entire Project Site		
	Average Water Year	Single Dry Year	3rd Year of Drought	Average Water Year	Single Dry Year	3rd Year of Drought
Projected Available Supply (acre-feet)						
MPUD Surplus Treated Water Supply	410 ^a	410 ^a	410 ^a	690 ^b	690 ^b	690 ^b
MPUD Well 30 ^c	254	254	254	0	0	0
California City Surplus Groundwater	3,407 ^d	3,407 ^d	3,407 ^d	0	0	0
Onsite Groundwater	403	403	403	403	403	403
Total	4,474	4,474	4,474	1,093	1,093	1,093
Project Demand (acre-feet)						
Edwards AFB Solar Project	200	200	200	30	30	30
Proposed Project ^e	133	133	133	30	30	30
Total	333	333	333	60	60	60
Surplus/Deficit	+4,141	+4,141	+4,141	+1,033	+1,033	+1,033

NOTES:

^a Based on average surplus from MPUD Past and Projected Water Supply and Demand for Service Area for 2018 and 2020. The production rate of groundwater wells is not climate-dependent.

^b Based on average surplus from MPUD Past and Projected Water Supply and Demand for Service Area for 2020 through 2040.

^c Since MPUD Well 30 is anticipated to be converted into a potable supply well in 2020, it is assumed that half of its capacity will be available to the project as a source of non-potable supply for construction.

^d California City has indicated its willingness to supply construction water demands for the project, but will not supply operational demands.

^e The proposed project would demand 200 AF over an 18-month period. Therefore, the yearly demand is assumed to be 133 AFY ([200 AF / 18 Months] * 12).

SOURCE: Dudek, 2018a.

Based on estimated project water demands, the commitment from MPUD to supply the project with water from Well 30, and data supporting the ability of the underlying aquifer to support development of an onsite groundwater well without adverse effects, there is sufficient water available to meet the future water demands of the proposed project during normal, single dry, and multiple dry years through 2040. Therefore, impacts related to water supply would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.17-3: The project would generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Construction

It is anticipated the project would not generate substantial amounts of non-recyclable waste during construction. Currently, the project site is vacant and contains no development and, therefore, there would be no demolition or removal of large debris. Materials brought to the project site would be used to construct facilities, and few residual materials are expected. Solar modules would be delivered to the site via shipping containers packaged via use of wood and cardboard materials. The shipping containers materials for module deliveries would be recycled and are not anticipated to generate non-recyclable waste. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. Any hazardous waste generated during construction would be disposed of at an approved location.

Non-hazardous construction refuse and solid waste would either be collected and recycled or disposed of at a local landfill. The Mojave-Rosamond Recycling and Sanitary Landfill (approximately 1.7 miles to the west of the southern project site and approximately 1.5 miles from the northern site) is the closest landfill to the project site and, therefore, would be the most likely recipient of project site solid waste. The Mojave-Rosamond Recycling and Sanitary Landfill has a remaining capacity of 76,310,297 cy with an anticipated closure year of 2123 (CalRecycle, 2019a). The next closest landfill is the Tehachapi Sanitary Landfill, which is located 13 miles northwest of the northern site and approximately 16 miles northwest of the southern site in Tehachapi, with a remaining capacity of 522,298 cy and anticipated closure date of 2020. Both landfills are Class III landfills and, therefore, accept wastes from construction and demolition as well as industrial sources, but do not accept hazardous waste, hot ashes, and liquids of any kind. As shown in Table 4.17-1, both landfills have significant capacity remaining (CalRecycle, 2019a; 2019b). In addition, with the implementation of Mitigation Measure MM 4.17-1, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during construction. Therefore, construction impacts of the project to existing landfills are anticipated to be less than significant.

Operation

During operation, little to no solid waste would be generated. The operations and maintenance buildings would include up to six permanent employees, and the only waste generated onsite would result from operations office and maintenance activities. The Tehachapi Sanitary Landfill has a planned cease operation date of 2020, but the Mojave-Rosamond Recycling and Sanitary Landfill has would continue to operate through 2123 and is expected to continue to serve the project throughout the rest of its operation. In addition, with the implementation of Mitigation Measure MM 4.17-1, as discussed below, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste generated during project operation, thereby further reducing solid waste generated during operation. Therefore, impacts related to landfill capacity would be less than significant with the implementation of Mitigation Measure MM 4.17-1.

Decommissioning

Solar PV panels have a lifespan of over 35 years, after which the land could be converted to other uses in accordance with applicable land use regulations in effect at that time. Solar PV panels contain valuable materials that would likely reused and recycled at the end of their useful life. Solar panel manufacturers have identified that approximately ninety percent of materials in solar panel modules can be recycled. Decommissioning of the gen-tie line route would not generate substantial amounts of solid waste. As stated above, the Mojave-Rosamond Recycling and Sanitary Landfill is expected to be in operation through 2123 and would serve as a solid waste disposal location during project decommissioning. Per Mitigation Measure MM 4.17-1, a collection and recycling program would be implemented during decommissioning to recycle project components and minimize disposal of project components in landfills. Following decommissioning, the project site would be returned to predevelopment conditions and would not generate waste. Therefore, impacts related to landfill capacity would be less than significant during decommissioning with the implementation of Mitigation Measure MM 4.17-1.

Mitigation Measures

MM 4.17-1: During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible. The provisions listed below shall apply to the project.

1. An onsite Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Construction, Operation and Maintenance and Decommissioning, Trash Abatement and Pest Management Program.
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 the Kern County Planning and Natural Resources Department prior to issuance of building permits.
5. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations and decommissioning. A site

plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.17-1, impacts would be less than significant.

Impact 4.17-4: The project would comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

The proposed project would generate solid waste during construction, operation, and decommissioning. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. The 1989 California Integrated Waste Management Act (AB 939) requires Kern County to attain specific waste diversion goals. In addition, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project. In 2011, the State passed AB 341, which established a policy goal that a minimum of 75 percent of solid waste must be reduced, recycled, or composted by the year 2020. In addition, as part of compliance with CALGreen requirements, Kern County implements the following construction waste diversion requirements:

- Submittal of a Construction Waste Management Plan
- Recycle and/or reuse a minimum 65 percent C&D waste; and
- Recycle or reuse 100 percent of tree stumps, rocks, and associated vegetation and soils resulting from land clearing.

Furthermore, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. Implementation of Mitigation Measure MM 4.17-1 would ensure compliance with all waste diversion and recycling requirements by requiring recycling during construction, operation, and decommissioning of the project. The proposed project would be required to comply with all federal, State, and local statutes and regulations related to the handling and disposal of solid waste. Therefore, implementation of the project would result in less-than-significant impacts.

Mitigation Measures

Implementation of Mitigation Measure MM 4.17-1 would be required.

Level of Significance after Mitigation

With implementation of the Mitigation Measure MM 4.17-1, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Past, present, or reasonably foreseeable future projects within the Antelope Valley are listed in Table 3-5 in Chapter 3, *Project Description*, of this EIR. The geographic scope for impacts to utilities and service systems includes projects within the service area for each of the utility providers described above, which includes demands on water supply, wastewater, stormwater drainage, and solid waste disposal. The scope

for impacts to water and wastewater includes projects within the FVGB. The scope for impacts to stormwater drainage and solid waste disposal includes projects that rely on the same infrastructure and solid waste disposal facilities. Impacts of the proposed project would be cumulatively considerable if the incremental effects of the proposed project when combined with other past, present, or reasonably foreseeable projects would result in a significant cumulative effect.

As described in Chapter 3, *Project Description*, of this EIR, 40 solar projects and 33 non-solar projects are proposed in the project vicinity that have the potential to impact existing water supply, if the projects were also to draw water from the FVGB. The water-intensive use period for renewable energy projects is typically the construction phase. Non-solar projects identified are of mixed-uses, which include a kennel training facility, cargo container expansion areas, a secondary residential unit, mobile home, performing arts center, a vehicle wrecking yard, a cell tower, recyclable collection and storage, and a small organic farm which are located within the FVGB and AVGB service area. The non-solar projects could potentially draw from AVEK's existing transmission pipelines, or the MPUD supply, which includes a series of existing wells. Given the limited water supply in the area, other projects are expected to either rely on new or existing water service hydrants, wells (similar to the project), transmission pipelines, or truck in their water supply. Therefore, the cumulative non-solar projects have the potential to result in significant impact on water supply within the local vicinity.

Water Supply

As described under Impact 4.17-2, the proposed project would need minimal water supply during construction, operation, and decommissioning. Non-potable water would be supplied by MPUD Well 30, which draws from the FVGB, and has proven to have sufficient water supply in comparison to the proposed project demand as shown in Table 4.17-2. Therefore, the proposed project's contribution to cumulative water supply impacts would be less than cumulatively considerable.

Wastewater

With regard to wastewater, the project is located in an area with no wastewater treatment provider and is not expected to generate a significant amount of wastewater. Wastewater produced during construction would be collected in portable toilet facilities and disposed of at an approved facility. Wastewater generated during operation and maintenance activities would be disposed of via a septic system approved by Kern County Health Department. Well water used onsite is not anticipated to require treatment for construction and operational uses; bottled potable water would be trucked to the site during construction. Similar to the proposed project, other solar projects would generate the same minimal amounts of wastewater. Therefore, the proposed project would not substantially contribute to a cumulative impact on regional wastewater treatment facilities or capacity.

Stormwater Drainage

As described above, there are no constructed stormwater drainage systems are present onsite and stormwater on the project site either percolates onsite or drains offsite by way of existing ephemeral drainages. Project activities are not expected to substantially alter the ground surface such that new stormwater drainage facilities are needed. Nonetheless, Mitigation Measure MM 4.10-1 would be implemented as a part of the proposed project and requires preparation of a drainage plan to reduce potential increases in stormwater runoff onsite and would detail any necessary physical structures required to control

stormwater. Per Mitigation Measure MM 4.10-1, no wells would be located in existing drainage onsite, thereby enabling these drainages to continue to naturally drain stormwater from the site unobstructed. These structures would be developed onsite along with the rest of project construction. Surrounding projects would also be required to prepare a drainage plan in accordance with Kern County Development Standards and Kern County Code of Building Regulations, that would help avoid substantial increases of stormwater generated onsite by their proposed ground disturbance; depending on the findings of their drainage plan, these projects may need to construct stormwater control structures onsite to reduce the potential for increased stormwater runoff. Additionally, as with the proposed project, all projects that would not retain all runoff onsite would be required to prepare a SWPPP, per Mitigation Measure MM 4.7-3, which would include BMPs designed to prevent the mixture of sediment and other pollutants with stormwater and degrading water quality. Therefore, the project would not contribute to cumulatively considerable impacts related to stormwater drainage facilities.

Solid Waste

The proposed project would generate a minimal amount of non-recyclable solid waste. Although the Tehachapi Landfill is expected to cease operation in 2020, the Mojave-Rosamond Landfill is expected to operate until 2123. To ensure that the proposed project reduces the amount of waste sent to these landfills, implementation of Mitigation Measure MM 4.17-1 requires that debris and waste generated shall be recycled to the extent feasible, and an onsite recycling coordinator be designated by the project proponent to facilitate recycling efforts. Surrounding projects would also be required to comply with all applicable ordinances in place designed to reduce the amount of solid waste disposed in landfills. Therefore, the proposed project would not contribute to a cumulatively considerable impact related to landfill capacity exceedance.

Electricity

The proposed project would include construction of a gen-tie that would tie into existing facilities and provide 300MW of renewable electrical energy and up to 3GWh of energy storage capacity to the state-wide utility grid. Electricity demand of the project would be minimal during construction and operations and would be provided by the onsite PV system in combination with SCE 12 kV distribution facilities. This project in combination with other cumulative solar projects in East Kern County would help to reduce or offset electricity on the state-wide utility grid and therefore provide a beneficial cumulative impact on electrical demand and facilities.

Natural Gas

The project does not include the relocation of existing natural gas facilities on the project site and minimal natural gas would be required for operation of the project. Therefore, the project would not contribute to a cumulatively considerable impact related to natural gas demand and facilities.

Telecommunications

The proposed project in combination with cumulative projects would increase demand on telecommunication facilities. However, demand associated with energy projects and other cumulative development would be minimal and is expected to be within the planning forecasts of the affected

telecommunications provider. Therefore, cumulative impacts related to telecommunications facilities would be less than significant.

In conclusion, the proposed project would be largely self-contained and would not have a significant impact on public utilities. The incremental effects of the proposed project would also not be substantial enough to result in a cumulatively considerable impact on utilities and service systems with implementation of Mitigation Measures MM 4.7-3, MM 4.10-1 and MM 4.17-1. Furthermore, the proposed project would result in a beneficial impact on utility services and offset future stress on energy service providers as energy demand grows in Kern County and Southern California.

Mitigation Measures

Implementation of Mitigation Measures MM 4.10-1, MM 4.7-3, and MM 4.17-1 would be required (see Section 4.7, *Geology and Soils*, and Section 4.10, *Hydrology and Water Quality*, for text of Mitigation Measures MM 4.7-3 and MM 4.10-1, respectively).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1, MM 4.7-3, and MM 4.17-1, cumulative impacts would be less than significant.

4.18.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for wildfire for the project. It also discusses potential impacts related to wildland wildfire that would result from implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. This section is based on the project plans and California Department of Forestry and Fire Protection (CAL FIRE) and Kern County Fire Hazards Severity Zone Maps.

4.18.2 Environmental Setting

Site Characteristics and Fire Environment

The CAL FIRE maps Fire Hazard Severity Zones (FHSZs), based on factors such fuel, slope, and fire weather to identify the degree of fire hazard throughout California (i.e., moderate, high, or very high). While FHSZs do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and, therefore, are of greater concern. The site drains from the northwest to the southeast at an approximate average grade of 0.5 percent, indicating that the site has low topographic relief and is relatively flat (Dudek, 2019a). According to the CAL FIRE, Kern County FHSZ Maps for the Local Responsible Areas (LRA), and as shown in **Figure 4.18-1, *Fire Hazard Severity Zones for Local Responsibility Areas***, most of the project site is classified as LRA Moderate. Given this designation, the project site is outside of areas identified by CAL FIRE as having substantial or very high risk. Moderate zones are typically wildland supporting areas of low fire frequency and relatively modest fire behavior. Further, according to the CAL FIRE, Kern County Fire Hazards Severity Zone FHSZ Maps for the State Responsible Areas (SRA), and as shown in **Figure 4.18-2, *Fire Hazard Severity Zones for State Responsibility Areas***, a portion of the project site, specifically the western most portion of the gen-tie study area, is also classified as SRA Moderate. The project site consists of undeveloped desert lands. Further, the southern project site abuts a Federal Responsibility Area (FRA). The surrounding land is primarily undeveloped land with some rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance facilities, mining, wind and solar energy, and meteorological towers. The area surrounding the majority of the project site is categorized as LRA Moderate, and the area surrounding the western portion of the gen-tie study area is SRA Moderate (see Figures 4.18-1 and 4.18-2).

Fire History

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources. Fire history represented in this section uses CAL FIRE's California Statewide Fire Map that shows fires back through 2013 (CAL FIRE, 2019a) and CAL FIRE's Fire and Resource Assessment Program (FRAP) database (CAL FIRE, 2019b). Based on a review of these maps, no fires in the recorded history have burned across the project site.

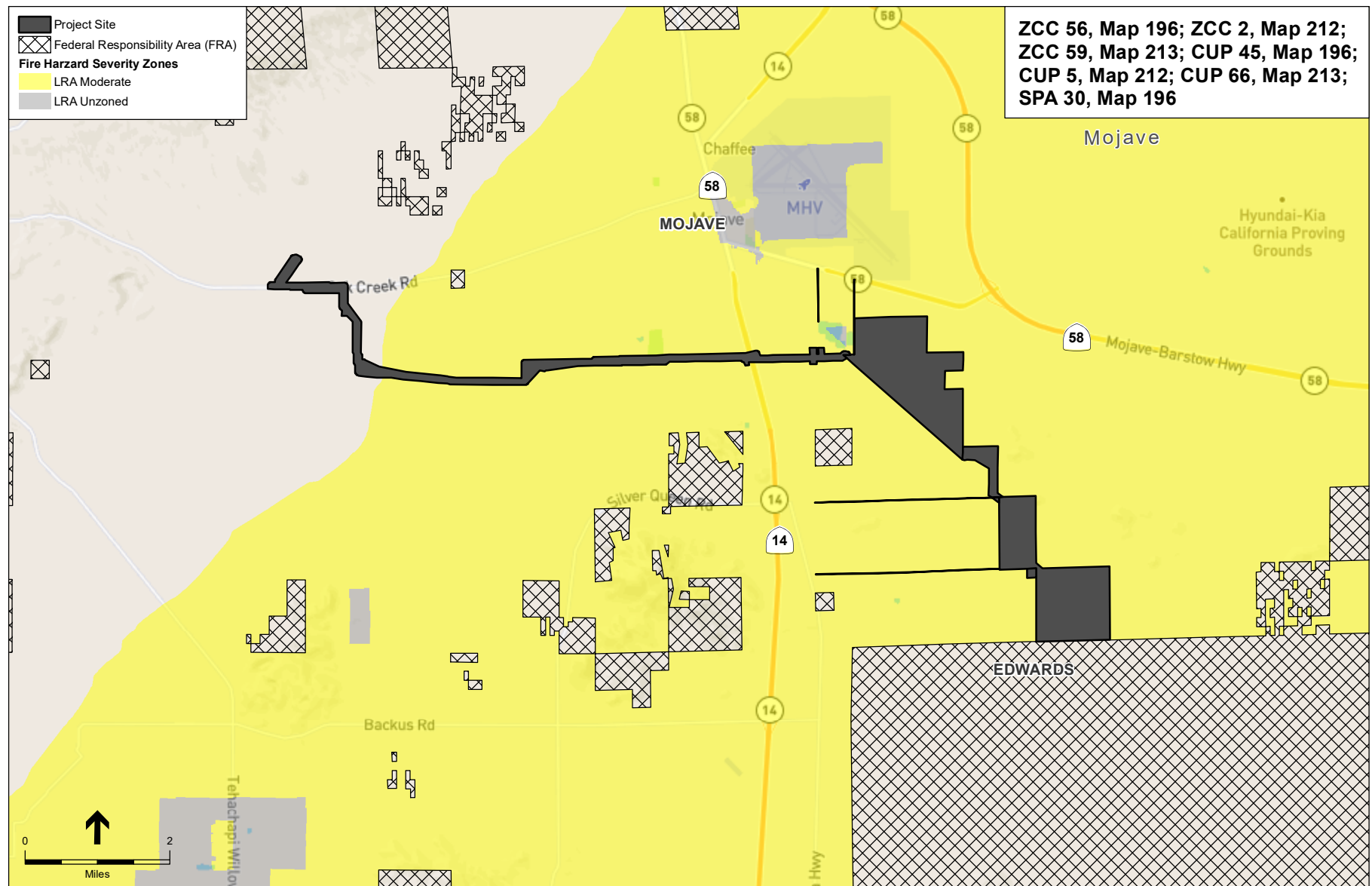


FIGURE 4.18-1: FIRE HAZARD SEVERITY ZONES FOR LOCAL RESPONSIBILITY AREAS

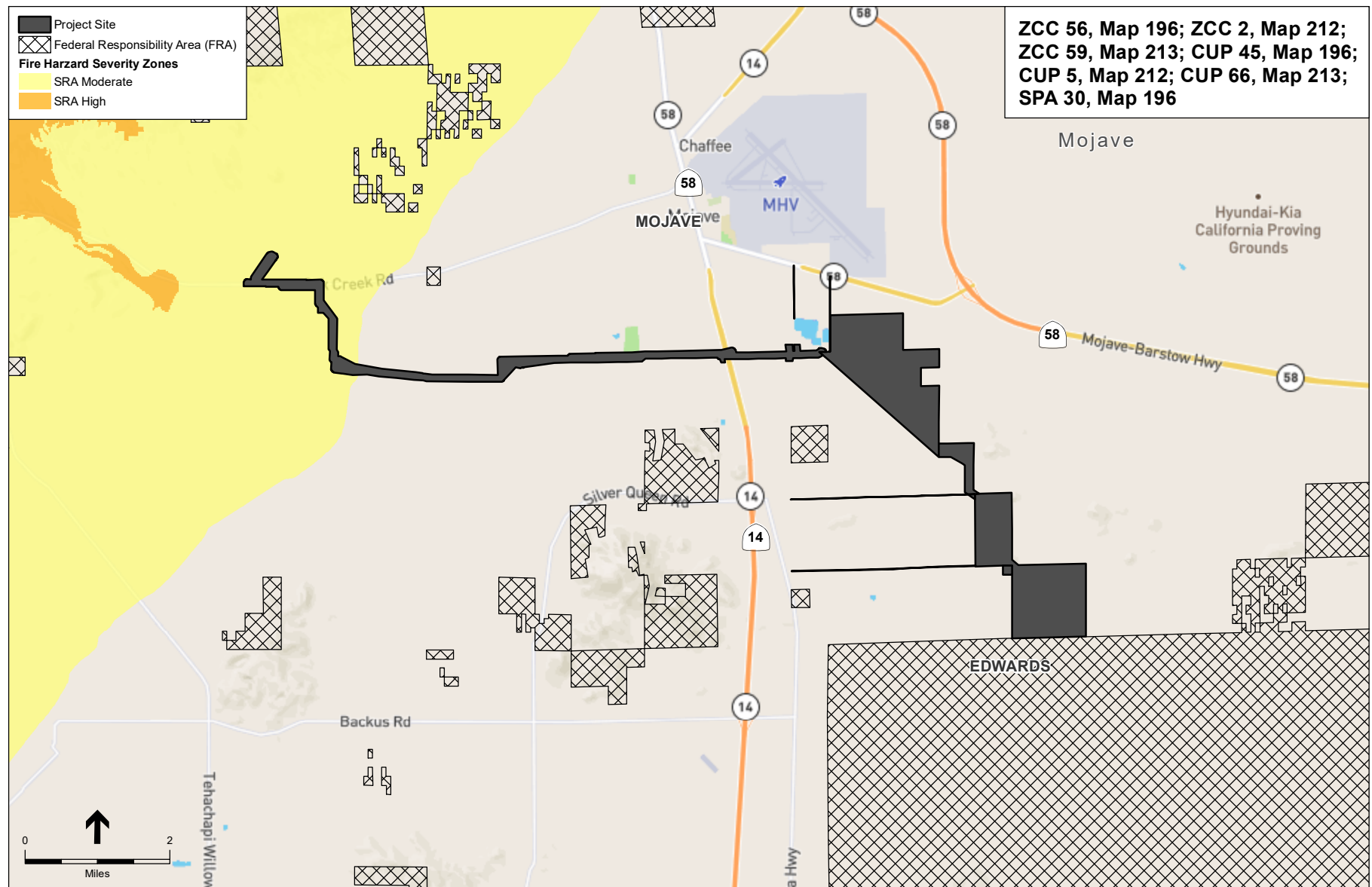


FIGURE 4.18-2: FIRE HAZARD SEVERITY ZONES FOR STATE RESPONSIBILITY AREAS

Vegetation (Fuels)

A total of 134 plant species were identified on the project site during reconnaissance-level and floristic surveys conducted in 2017 and 2018 (Dudek, 2019a). Ten vegetation communities and land cover types occur within the project site. The project site consists of lands in the north that were previously used for grazing operations, dirt roads and desert vegetation in the south. Existing development in the project vicinity includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance facilities, mining, wind and solar energy, and meteorological towers. The community of Mojave is directly north of the site, including the Mojave Air and Space Port directly north of SR 58. The Burlington Northern Santa Fe (BNSF) Railway forms the western edge of the northern site and the gen-tie line crosses the BNSF Railway in two locations. The southern site is directly north of Edwards AFB. A description of the vegetation communities and land cover types are provided below. Acreages of vegetation communities and land cover types are provided in **Table 4.18-1, Vegetation Community or Land Cover Type on the Project Site.**

TABLE 4.18-1: VEGETATION COMMUNITY OR LAND COVER TYPE ON THE PROJECT SITE

Vegetation Community or Land Cover Type	Acreage
<i>Atriplex polycarpa</i> Scrub Alliance Allscale Scrub Alliance	1,968
<i>Ericameria nauseosa</i> Scrub Alliance Rubber Rabbitbrush Scrub Alliance	4
Non-native Grassland	97
<i>Ambrosia salsola</i> – <i>Larrea tridentata</i> Scrub Association Cheesebush–Creosote Bush Scrub Association	71
<i>Ambrosia salsola</i> Scrub Association Cheesebush Scrub Association	47
<i>Larrea tridentata</i> Scrub Association Creosote Bush Scrub Association	469
<i>Larrea tridentata</i> – <i>Atriplex polycarpa</i> Scrub Association Creosote Bush–Allscale Scrub Association	11
<i>Ambrosia dumosa</i> Scrub Association White Bursage Scrub Association	78
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> Scrub Association Creosote Bush–White Bursage Scrub Association	35
Non-vegetated Channel	5
Disturbed	135
Urban/Developed	32

4.18.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

2016 California Fire Code

The 2016 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. Chapter 6 (Building Services and Systems) of the Code focuses on building systems and services as they relate to potential safety hazards and when and how they should be installed. Building services and systems are addressed include emergency and standby power systems, electrical equipment, wiring and hazards, and stationary storage battery systems. Chapter 33 (Fire Safety During Construction and Demolition) of the Code outlines general fire safety precautions to maintain required levels of fire protection, limit fire spread, establish the appropriate operation of equipment and promote prompt response to fire emergencies. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire service features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

2016 California Building Code, Chapter 7A

Chapter 7 of the 2016 California Building Code details the materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area. A Wildland-Urban Interface Area is defined in Section 702A as a geographical area identified by the state as a “Fire Hazard Severity Zone” in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. The building code details the materials, systems and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

California Building Code, Section 608

Section 608 of the California Building Code includes requirements for battery energy storage systems greater than 20 kWh, which includes the proposed energy storage facilities. Section 608 includes requirements for vehicle impact protection, location, spacing between batteries, egress, security, and fire suppression systems.

Public Resources Code 4291–4299

California Public Resources Code Section 4291–4299 et seq. requires that brush, flammable vegetation, or combustible growth within 100 feet of buildings be maintained. Vegetation that is more than 30 feet from the building, less than 18 inches high, and important for soil stability, may be maintained; as may single specimens of trees or other vegetation that is maintained so as to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. Additionally, the Public Resources Code

outlines infraction fees, certification, and compliance procedures applicable with state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to wildfire. The policies and implementation measures in the Kern County General Plan related to wildfire that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Chapter 4. Safety Element

4.6. Wildland and Urban Fire

Policies

- Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.
- Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.
- Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measures

- Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Mojave Specific Plan

The Mojave Specific Plan guides development within and surrounding the Mojave community. The Mojave Specific Plan addresses issues of importance in the area by stating goals, policies, and implementation measures to accommodate growth while protecting the community's unique business, transportation, and environmental issues. The policies in the Mojave Specific Plan for wildfire applicable to the project are provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 9. Seismic and Safety Element

Policies

- Policy 9.4.2: Work with the Kern County Fire Department and the Kern County Sheriff's Department to ensure sufficient services can adequately protect and serve the community.
- Policy 9.4.3: Ensure that street widths and clearance areas are sufficient to accommodate fire protection and emergency vehicles during land division review and site plan review.
- Policy 9.4.5: Continue to enforce the Kern County Health, Fire and Building standards for new development and rehabilitation of existing structures.

West Edwards Road Settlement Specific Plan

The West Edwards Road Settlement Specific Plan addresses issues of importance in the area by stating goals, policies, implementation measures, and general provisions specific to the area. The implementation measures in the West Edwards Road Settlement Specific Plan for wildfire applicable to the project is provided below. The Mojave Specific Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Mojave Specific Plan are incorporated by reference.

Chapter 4. Safety Element

Implementation Measures

- Measure 4.1.4.2: All construction shall comply with the requirements of the Kern County Code of Building Regulations and the Uniform Fire Code (UFC) regarding water supply, fire flow, and construction standards.

Kern County Fire Department Wildland Fire Management Plan

The KCFD Wildland Fire Management Plan adopted in 2009 assesses the wildland fire situation throughout the SRA within the County. The Plan includes stakeholder contributions and priorities and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan systematically assesses the existing levels of wildland protection services and identifies high-risk and high-value areas, which are potential locations for costly and damaging wildfires. The plan also ranks the areas in terms of priority needs and prescribes what can be done to reduce future costs and losses. The project site is located within a moderate fire hazard severity zone (KCFD, 2009).

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2016 California Fire Code and the 2015 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of

buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees therefore (Kern County, 2017).

Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March of 2018 is the most current document that assesses the wildland fire situation throughout the SRA within the County. Similar to other plans, this document includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan provides for a comprehensive analysis of fire hazards, assets at risk, and level of services to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. Additionally, the plan provides an annual report of unit accomplishments, which, in 2017, included completion of a number of fuel reduction projects, hosted three wildfire safety expos in battalions 1, 5, and 7, and the award of three SRA fuel reduction grants for a total of \$500,000. The plan gives an overview of KCFD Battalions and ranks these areas in terms of priority needs as well as identifies the areas of SRA. According to the plan, 69 percent of Kern County areas are within a SRA. The County is broken up into six different fuel management areas, Tehachapi, Western Kern, Northern Kern, Mt. Pinos Communities, Kern River Valley, and Valley. The project site is located within Battalion 1 (Tehachapi) which is within a moderate fire hazard severity zone within the Tehachapi fire plan management area (KCFD, 2018).

Fire Prevention Standard No. 503-507 Solar Panels

The Kern County Fire Department Fire Prevention Division adopted Standard No. 503-507 Solar Panels (Ground Mounted, Commercial & Residential) on March 27, 2019. The standard is implemented in accordance with the 2016 CFC and Kern County Ordinance and is an official interpretation of the Kern County Fire Marshal's Office. The standard outlines installation requirements for photovoltaic ground-mounted and roof-mounted solar panels. The proposed project would mount systems for the modules on steel support posts that would be pile driven into the ground and would therefore comply with the ground mounted requirements of this fire prevention standard. Ground mounted solar panel requirements of this standard include water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD, 2019c).

4.18.4 Impacts and Mitigation Measures

Methodology

Wildfire impacts are considered on the basis of: (1) offsite wildland fires that could result due to the proposed project, and (2) onsite generated combustion that could affect surrounding areas. The project's potential impacts associated with wildfires have been evaluated using a variety of resources, including CAL FIRE maps showing FHSZs, FRAP, and fire history, vegetation data from the Biological Resources Technical Report (Dudek, 2019a), Cultural Resources Inventory and Evaluation Report (Dudek 2019b), Hydrology and Water Quality Report (Dudek, 2018), project location maps, and project characteristics. Wildfire impacts are considered on the basis of: (1) offsite wildland fires that could impact the proposed project, and (2) onsite

generated combustion that could affect surrounding areas. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the CEQA *Guidelines*, to determine if a project could potentially have a significant impact with respect to Wildfires.

A project would have a significant impact with respect to wildfires if it would be located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and if the project would:

- a) Substantially impair an adopted emergency response plan or emergency evacuation plan;
- b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
- c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment;
- d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes.

Project Impacts

Impact 4.18-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.

The project site is not classified as being within a high fire hazard severity zone and is not anticipated to physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site. The site is located in a rural, sparsely developed areas with limited population. The project site is not located along an identified emergency evacuation route and is not identified in any adopted emergency evacuation plan. Also, in compliance with applicable Fire Code and Building Code requirements, construction and maintenance/operations managers and personnel would be trained in fire prevention and emergency response. Fire suppression equipment specific to construction would be maintained on site. Additionally, project construction and maintenance/operations would comply with applicable existing codes and ordinances related to the maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials. Therefore, the project would not conflict with the implementation of, or physical interference with, an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant.

Mitigation Measure

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.18-2: The project would, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Slope and wind speed can influence the spread of fires. Upslope topography eventually increases the spread rate of the fire in all fuel beds over flat conditions (International Journal of Wildland Fire 2002, 2010). As described in Chapter 3, *Project Description*, elevations across the project site range from approximately 2,660 feet above mean sea level in the northwest portion of the site to approximately 2,500 feet above mean sea level in the southeast portion of the site. As mentioned above, the site has low topographic relief and is relatively flat. The proposed project would introduce temporary onsite employees during construction and six permanent employees. The project site classified as LRA Moderate and SRA Moderate; thus, the potential for wildfire on the project site exists, but is not considered high. Project construction would comply with applicable existing codes and ordinances related to the maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials. As discussed in Section 4.14, *Public Services*, the project proponent/operator shall develop and implement a Fire Safety Plan that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code for use during construction, operation and decommissioning, per implementation of Mitigation Measure MM 4.14-1. Under this Fire Safety Plan, construction and maintenance personnel would be trained and equipped to extinguish small fires, thus reducing the risk of fire onsite. Given the moderate potential for fire, the project site's flat topography, and with implementation of Mitigation Measure MM 4.14-1, the project is not anticipated to expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire due to slope, prevailing winds, and other factors and impacts would be less than significant.

Mitigation Measure

Implementation of Mitigation Measure MM 4.14-1 would be required (see Section 4.14, *Public Services*, for text of Mitigation Measure MM 4.14-1).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts would be less than significant.

Impact 4.18-3: The project would require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

The project would include the construction of a gen-tie line, an overhead and underground collection system, solar panel arrays, an O&M facility, an energy storage facility, a collector substation, and internal and external roads that could potentially exacerbate fire risk and result in temporary or ongoing impacts to the environment. The 34.5 kilovolt (kV) collection system would connect to the transformers of each array.

The collection system would likely be installed along internal access roads to collect power from the rows of panels and deliver it to the switching station. This collection system would likely be installed in subsurface trenches, though in some areas of the site, part or all of the collection system may be housed in above-grade facilities. The collection system would be rated at between 1,000 to 2,000 volts DC until it reached the inverters and a 34.5 kV AC intermediate voltage system between the inverters and the project switching station. Each of the project's facilities would include inverters, underground and overhead electrical collection systems, and fiber optics. Electrical collection systems would be installed in conjunction with panel arrays within the project site, connecting each solar panel to a feeder circuit; each feeder circuit would in turn be connected to the collector substation. The different solar panel circuits would gather into 34.5 kV circuits and either step-up to 230 kV at the United Street conversion station and/or step-up to 230 kV at the onsite substation. The power would then be delivered via 230 kV circuits to a grid interconnection point at the SCE Windhub Substation and/or Westwind Substation.

New internal roads would be constructed to serve as access roads from the existing road network to the solar array blocks. All road improvements would be completed per Caltrans and/or County code and regulations. These roads would be cleared and compacted for equipment and emergency vehicle travel and access to the solar blocks. These project site access roads would remain in place for ongoing operations and maintenance activities after construction is completed. Further, the proposed project could also require new unpaved roads to be constructed off site to serve as access roads from the existing road network to the project. All new roads would comply with development requirements for emergency access and, therefore, would not exacerbate fire risk that could result in temporary or ongoing impacts to the environment.

Most fires in the desert are caused by lightning or vehicles. Lighting could hit the collection system or energy storage facility, potentially causing a wildfire. Further, as described above, the use of maintenance vehicles can increase fire risk due to driving heated mufflers over vegetated areas. Additionally, as discussed in Section 4.14, *Public Services*, the project proponent/operator shall develop and implement a Fire Safety Plan that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code for use during construction, operation and decommissioning, per implementation of Mitigation Measure MM 4.14-1. Implementation of this plan would ensure that potential impacts related to installation or maintenance of associated infrastructure is reduced and, thus, impacts would be less than significant.

Energy Storage System: An energy storage system with a maximum capacity of up to 3 GWh is proposed to be located adjacent to the collector substation and/or throughout the solar arrays. The battery system is DC coupled with the PV system, connecting electrically at the DC bus of the inverters. The same inverters, transformers, medium voltage equipment, and AC wiring all serves both the battery energy storage system and the PV system. The proposed project's battery storage would include multiple levels of protections against overcharge. The energy storage systems would be situated internally to the project site, with access from a primary fire apparatus roadway and would be separated from each other per the setback requirements in the California Building Code, Section 608. The proposed energy storage facilities also include the following important monitoring and safety components: (1) Modular battery racks designed for ease of maintenance, (2) Integrated heat and fire detection and suppression system, (3) Integrated air conditioning system and (4) Integrated battery management system. The heat and fire detection system would be linked to an automatic fire suppression system for each energy storage system. Critical information from the battery system, equipment data would be monitored by the battery monitoring system along with the solar plant performance with the SCADA control system. The battery management system would track the performance, voltage and current, and state of charge of the batteries, proactively searching for changes in

performance that could indicate impending battery cell failure, and power down and isolate those battery strings in order to avoid potential failures. As discussed in Section 4.14, Public Services, the project proponent/operator will develop and implement a Fire Safety Plan that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code for use during construction, operation and decommissioning, per implementation of Mitigation Measure MM 4.14-1. Implementation of this plan would ensure that potential impacts related to installation or maintenance of associated infrastructure associated with the energy storage system is reduced and, thus, impacts would be less than significant.

Mitigation Measure

Implementation of Mitigation Measure MM 4.14-1 would be required (see Section 4.14, *Public Services*, for text of Mitigation Measure MM 4.14-1).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts would be less than significant.

Impact 4.18-4: The project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes.

Development of the proposed project would alter existing onsite drainage patterns and flowpaths compared to existing conditions and include the introduction of new impervious surfaces. The project would require implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include erosion and sediment control BMPs during construction, thereby reducing the potential of erosion and siltation during construction and would control potential flooding events that could occur during construction. Additionally, the proposed new impervious surfaces would generate additional stormwater runoff onsite, albeit in minor quantities compared to existing conditions. However, this could exacerbate potential erosion and sedimentation onsite or downstream. As discussed in Section 4.10, *Hydrology and Water Quality*, Kern County requires development of a drainage plan with the site development grading permit, which will manage stormwater and reduce the risk for offsite impacts due to erosion and impacts on water quality, as implemented by Mitigation Measure MM 4.10-1. Design measures are intended to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding on or off site. The drainage plan would include engineer recommendations meant to offset increases in stormwater runoff and would incorporate them into the project design. Since the project site is entirely undeveloped under existing conditions, the project would result in a net increase in the amount of impervious surfaces as a result of constructing equipment foundations, the O&M building and energy storage facilities foundations, and access roads. However, a majority of the project site would remain pervious. Implementation of Mitigation Measure MM 4.10-1 would minimize potential increases in runoff and ensure that the retention basins and other stormwater management features are implemented to minimize erosion and sedimentation to less than significant. As discussed in Section 4.10, *Hydrology and Water Quality*, most of the drainage flow within the project site infiltrates into the soils onsite.

The project site is located south and east of the Tehachapi Mountains and is relatively flat. Based on the fire history immediately surrounding the site, moderate zone designation, soil types, and surface hydrology, there is a low potential for the project site to be at risk of post-fire instability or drainage changes.

While the project would introduce new structures to the project site, the structures would not be placed in a highly flammable landscape. Furthermore, with the implementation of Mitigation Measure 4.10-1, any potential impacts from runoff and erosion would be minimized. Therefore, the project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be less than significant with the incorporation of Mitigation Measure MM 4.10-1.

Mitigation Measure

Implementation of Mitigation Measure MM 4.10-1 would be required (see Section 4.10, *Hydrology and Water Quality*, for text of Mitigation Measure MM 4.10-1).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for wildfire impacts is considered the Antelope Valley. This geographic scope was selected because the land within the region possesses relatively similar uses, including sparse desert vegetation, rural access roads, scattered rural residences, producing and non-producing water wells, cattle ranching and maintenance facilities, mining, wind and solar energy uses. As shown in Chapter 3, *Project Description*, Table 3-5, *Cumulative Projects List*, there are approximately 73 projects proposed or approved throughout the Antelope Valley in Kern County and in the desert portion of Kern County outside the Antelope Valley, and an additional 27 projects proposed throughout Lancaster, Palmdale, and Unincorporated Los Angeles County. Of the approximately 73 total projects in Kern County, 43 would be located within 6 miles of the project site and 35 would be located within 1 mile of the project site.

With regard to impairment of an adopted emergency response plan or emergency evacuation plan, all of the related projects would be required to provide adequate emergency access in accordance with County Fire Code and Building Code requirements and prior to the issuance of a building permit. As concluded in the discussion of project impacts above, the project would have a less than significant impact related to impairment of an adopted emergency response or evacuation plan. Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact to an adopted emergency response plan or emergency evacuation plan and, thus, would result in a significant and unavoidable cumulative impact.

With regard to cumulative impacts related to exposure of project occupants to pollutant concentrations from a wildfire, while the proposed project is not within a LRA, SRA, or FRA identified as having substantial or very high fire risk, some related projects in the area may be. Similar to the proposed project, all related projects would be required to implement a Fire Safety Plan similar to the one required by Mitigation Measure MM 4.14-1 and would be required to implement building and landscape design features in accordance with the Fire Code and Building Code to reduce wildfire risk and exposure of occupants to pollutant concentrations from a wildfire. Adherence to the Fire Code and Building Code requirements would minimize potential impacts related to exposure to and the uncontrolled spread of a wildfire. As concluded in the discussion of project impacts above, the project would have a less-than-significant impact related to exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled

spread of a wildfire. Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to exposure of project occupants to pollutant concentrations from a wildfire and, thus, would result in a significant and unavoidable cumulative impact.

Related projects may require associated infrastructure such as roads, fuel breaks, and power lines that could exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. These projects would be reviewed by Kern County for land use and zoning consistency and compliance with applicable requirements, and potentially analyzed for environmental impacts. The placement of infrastructure would adhere to all fire codes to minimize the potential fire risk such as siting and design. The proposed project would include the construction of a gen-tie line, an overhead and underground collection system, solar panel arrays, an O&M facility, an energy storage facility, a collector substation, and internal and external roads. While the potential for fire is considered moderate, Mitigation Measure MM 4.14-1 would be implemented to ensure that a Fire Safety Plan is prepared, that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code, for use during project construction, operation and decommissioning. Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to the *installation or maintenance of associated infrastructure* and, thus, would result in a significant and unavoidable cumulative impact.

Some related projects could be proposed in areas that could expose people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire instability. Based on the recent fire events in California, all projects would be required to adhere to Kern County's zoning and land use designations and codes, State and local fire codes, and regulations associated with drainage and site stability. These regulations, policies, and codes would reduce the potential for exposing people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire instability. Each project would require site-specific hydrology and drainage studies for effective drainage design. As concluded in the discussion of project impacts above, with the implementation of Mitigation Measure MM 4.10-1, the project would not expose people or structures to significant risks due to post-fire slope instability or drainage changes and would have a less-than-significant impact. Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to *exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes* and, thus, would result in a significant and unavoidable cumulative impact.

Mitigation Measures

Implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1 would be required (see Section 4.10, *Hydrology and Water Quality*, and Section 4.14, *Public Services*, for text of Mitigation Measures MM 4.10-1 and MM 4.14-1, respectively).

Level of Significance after Mitigation

Even with implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1, impacts would remain significant and unavoidable.

Chapter 5

Consequences of Project Implementation

5.1 Environmental Effects Found to Be Less than Significant

Section 15128 of the CEQA *Guidelines* requires that an EIR “contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.”

Kern County has engaged the public in the scoping of the environmental document. Comments received during scoping have been considered in the process of identifying issue areas that should receive attention in the EIR. The EIR’s contents were established based on the Notice of Preparation/Initial Study (NOP/IS) located in Appendix A of this EIR that was prepared in accordance with the CEQA *Guidelines* and in consideration of public and agency input received during the scoping process.

Issues that were found to have no impact or less-than-significant impacts do not need to be addressed further in this EIR. Based on the findings of the NOP/IS and the results of scoping, it was determined that the project would have no impact with regard to the following impact thresholds:

- Population and Housing
- Recreation

The NOP/IS determined that the project would include up to six permanent onsite employees at the operations and maintenance (O&M) building, likely drawn from the local labor force and would commute from their permanent residences to the project site. However, even if the maintenance employees were hired from out of the area and had to relocate to eastern Kern County, the minor addition of persons to this area would not result in a substantial increase in population in the area. Consequently, this would represent a minor increase in the number of users at local recreational facilities. As a result, the project would not directly or indirectly induce the development of any new housing or businesses, and there would not be a detectable increase in the use of parks or other recreational facilities. No impacts to population and housing or recreation would occur and no further analysis is warranted.

For all other resource areas, this EIR contains a comprehensive analysis of potential environmental impacts.

After further study and environmental review, as provided in this EIR, it was determined that project-level impacts in the following areas would be less than significant or could be reduced to less-than-significant levels with mitigation measures; however, these resource areas are evaluated in this EIR for their potential significance:

- | | |
|-------------------------------------|--------------------------------|
| • Agriculture and Forest Resources; | • Hydrology and Water Quality; |
| • Biological Resources; | • Land Use and Planning; |
| • Cultural Resources; | • Mineral Resources; |
| • Energy; | • Public Services; |
| • Geology and Soils; | • Transportation; |
| • Greenhouse Gas Emissions; | • Tribal Cultural Resources; |

- Hazards and Hazardous Materials;
- Utilities and Service Systems; and
- Wildfires.

5.2 Significant Environmental Effects that Cannot Be Avoided

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

After further study and environmental review, as provided in this EIR, it was determined that project-level and cumulative impacts in the following areas would be significant and unavoidable for the project, even with the incorporation of reasonable mitigation measures, which would attempt to reduce impacts to the greatest extent feasible.

As shown in **Table 5-1, Summary of Significant and Unavoidable Impacts of the Project**, impacts in the following areas would be significant and unavoidable, even with the incorporation of feasible mitigation measures that attempt to reduce impacts to the extent feasible.

TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

Resources	Project Impacts	Cumulative Impacts
Aesthetics	Implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. Mitigation Measures MM 4.1-1 through MM 4.1-4 would be incorporated to reduce visual impacts that would occur from the collection of debris along the site boundary and would limit vegetation removal and would plant native vegetation. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped desert landscape character of the project site, impacts to visual resources would remain significant and unavoidable .	<p>The project would have cumulatively significant and unavoidable aesthetic impacts related to visual character after implementation of mitigation. Although implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7 would reduce the adverse visual changes experienced at individual viewpoints, there are no mitigation measures that would allow for the preservation of the existing visual character of the area. The conversion of approximately 2,006 acres of privately owned land to a solar energy production facility is considered a significant and unavoidable cumulative impact.</p> <p>As it relates to impacts associated with light and glare, the project would implement mitigation measures that would reduce the project's impacts. However, given the number of proposed cumulative projects directly adjacent to and within proximity of the project and the conversion of thousands of acres of land in a presently rural area, even with implementation of mitigation, the project and cumulative projects combined would result in significant and unavoidable cumulative impacts related to light and glare.</p>

TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

Resources	Project Impacts	Cumulative Impacts
Air Quality	It is anticipated that there would be times during the project's construction and decommissioning activities that would result in significant temporary levels of NO _x and PM ₁₀ emissions that would conflict with regulations or delay the attainment of applicable EKAPCD standards and expose sensitive receptors to substantial pollutant concentrations, even with adherence to EKAPCD's Ozone Attainment Plan and implementation of mitigation measures. The project would result in perceptible temporary levels of PM ₁₀ and PM _{2.5} emissions during construction and decommissioning, even with the incorporation of Mitigation Measures MM 4.3-1 through MM 4.3-4, these temporary impacts would be considered significant and unavoidable .	There are several alternative energy (wind and solar) projects being developed within the Eastern Kern geographical area. From a site specific project level operational review, these projects are required to comply with all rules and regulations of the Eastern Kern Air Pollution Control District. Impacts associated with operation of the proposed facilities are generally considered less than significant. However, given the total number of development proposals within the region, along with the temporary levels of PM emissions generated during construction and decommissioning activities, even with the implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4, cumulative temporary construction and decommissioning impacts are considered significant and unavoidable .
Biological Resources	There would be no significant and unavoidable project impacts.	As development increases within Kern County, impacts to biological resources within the region are increasing on a cumulative level. When considered with the number of present and reasonably foreseeable future development projects in the Antelope Valley, the project would result in a significant and unavoidable cumulative loss of foraging and nesting habitat for special-status species, even with the implementation of project-specific Mitigation Measures MM 4.4-1 through MM 4.4-14. The loss of such foraging and nesting habitat for special-status species that may utilize habitat on the project site would result in a significant and unavoidable cumulative impact.
Noise	It is anticipated that there would be times during the project's construction and decommissioning activities would generate noise greater than the standard 65dB(a) for the Kern County General Plan and 55 dB(A) for short period of times. Implementation of Mitigation Measures MM 4.13-1 and MM 4.13-3 would reduce impacts to the extent feasible during construction activities. However, despite the implementation of mitigation, construction activities could generate noise greater than the standard for the Kern County General Plan and for short period of times, resulting in temporary construction impacts that would be considered significant and unavoidable . Given the fact that construction activities could generate noise greater than the standard 65dB(a) for the Kern County General Plan and 55 dB(A) for short period of times, temporary construction impacts are considered	There would be no significant and unavoidable cumulative impacts.

TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

Resources	Project Impacts	Cumulative Impacts
	significant and unavoidable. Decommissioning activity noise levels could result in disturbances of noise sensitive receptors in the project vicinity similar to those during the loudest construction phases, if activities are not restricted to daytime hours. Thus, similar to construction, impacts during decommissioning of the project are considered significant and unavoidable .	
Wildfire	There would be no significant and unavoidable project impacts.	Despite implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1, given the location in a rural area, the project and related projects have the potential to result in a cumulative impact related to the installation or maintenance of associated infrastructure and, thus, would result in a significant and unavoidable cumulative impact.

5.3 Irreversible Impacts

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

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

5.4 Growth Inducement

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

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

Growth inducement can be a result of new development that requires an increase in employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the project would not induce substantial growth. There would be six permanent employees at the O&M building during operations. It is anticipated that the construction workforce would commute to the sites each day from local communities, and the majority would likely come from the existing labor pool as construction workers travel from site to site as needed. Construction staff not drawn from the local labor pool would stay in any of the local hotels in local communities.

Although the project would contribute to the energy supply, which supports growth, the development of power infrastructure is a response to increased market demand. It does not induce new growth. Kern County planning documents already permit and anticipate a certain level of growth in the area of the project and in the State as a whole, along with attendant growth in energy demand. It is this anticipated growth that drives energy-production projects, not vice versa. The project would supply energy to accommodate and support existing demand and projected growth, but it would not foster any new growth. Therefore, any link between the project and growth in Kern County would be speculative.

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

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6.1 Introduction

The California Environmental Quality Act (CEQA) requires that an EIR describe a range of reasonable alternatives to the project or to the location of the project that could feasibly avoid or lessen any significant environmental impacts of the project while attaining most of the project's basic objectives. An EIR also must compare and evaluate the environmental effects and comparative merits of the alternatives. This chapter describes alternatives considered but eliminated from further consideration (including the reasons for elimination), and compares the environmental impacts of several alternatives retained with those of the project.

The following are key provisions of the CEQA *Guidelines* (Section 15126.6):

- The discussion of alternatives shall focus on alternatives to the project or its site that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.
- The No Project Alternative shall be evaluated, along with its impacts. The no-project analysis shall discuss the existing conditions at the time the notice of preparation was published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a "rule of reason." Therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner that fosters meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in CEQA *Guidelines* Section 15126.6(f)(1)) are environmental impacts, site suitability, economic viability, social and political acceptability, technological capacity, availability of infrastructure, General Plan consistency, regulatory limitations, jurisdictional boundaries, and whether the project proponent could reasonably acquire, control, or otherwise have access to an alternative site. If an alternative has effects that cannot be reasonably identified, if its implementation is remote or speculative, and if it would not achieve the basic project objectives, it need not be considered in the EIR.

6.1.1 Significant Impacts of the Project after Mitigation

Implementation of the project has the potential to have significant adverse effects on:

- Aesthetics (project and cumulative)
- Air quality (project and cumulative)

- Biological resources (cumulative only)
- Noise (project only)
- Wildfire (cumulative only)

Even with the mitigation measures described in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR, impacts in these issue areas would be significant and unavoidable. Therefore, per the CEQA *Guidelines*, this section discusses alternatives that are capable of avoiding or substantially lessening effects on these resources. The significant and unavoidable impacts of the project are discussed below.

Aesthetics

As discussed in Section 4.1, *Aesthetics*, implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. When introduced into the project viewshed, the industrial nature of the project would substantially change the existing visual character of the landscape as viewed from sensitive receptors for the life of the project. The project facilities would add cultural modifications to the project site's landscape from certain viewpoints. Operation of a solar power generation and battery storage facility of this size would introduce new infrastructure and other anthropogenic features; alter the existing visual character of the landscape from one that is rural to more industrial in nature; be seen by viewers of high, moderately high, and moderate sensitivity; and reduce existing scenic quality through the intrusion of human-made elements on land that is currently largely undeveloped. Native vegetation would be left in place around the project site where feasible, allowing for a natural screening of project components. Mitigation Measures MM 4.1-1 through MM 4.1-4 would be incorporated help to reduce visual impacts associated with the proposed project by limiting vegetation removal, planting native vegetation, providing privacy fencing, reducing the visibility of project features, and ensuring that the site is kept free of debris and trash. Furthermore, the color treatment of buildings would help these components to better blend in with the natural landscape. Nevertheless, even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-4, project level impacts to visual character and quality would remain significant and unavoidable. The project would result in less than significant impacts related to light and glare with the implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7.

Additionally, while related projects in the region would also be required to implement various mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. Therefore, even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7, the project's contribution to significant impacts associated with visual character in the Antelope Valley and impacts related to light and glare would be cumulatively significant and unavoidable.

Air Quality

With project implementation, long-term increases in operational emissions of primary concern within the region (i.e., ROG, NO_x, CO, SO_x, and PM₁₀, and PM_{2.5}) would be minimal and would not exceed applicable significance thresholds. However, construction and decommissioning of the project would result in temporary increases of PM₁₀ that would exceed Eastern Kern Air Pollution Control District's (EKAPCD's) significance thresholds. As a result, construction- and decommissioning-generated emissions along with other cumulative projects located within the project area, would exceed EKAPCD's significance thresholds. Development of the project would require implementation of Mitigation Measures MM 4.3-1, which would

require adherence to diesel emission-reduction measures during construction which would serve to reduce PM emissions, as well as Mitigation Measure MM 4.3-2, which would require implementation of a dust control plan which would serve to reduce fugitive PM emissions during construction, in order to reduce emissions of particulate matter (PM₁₀ and PM_{2.5}) during construction and decommissioning of the project. However, even with implementation of this mitigation, temporary increases in PM₁₀ and PM_{2.5} during construction and decommissioning would exceed the Eastern Kern Air Pollution Control District (EKAPCD) significance thresholds. In addition, as the Mojave Desert Air Basin (MDAB) is in non-attainment for PM₁₀ and the project would result in significant temporary levels of PM₁₀ emissions during construction, the project could conflict with or delay the attainment of the standard. Furthermore, construction- and decommissioning-generated emissions along with other cumulative projects located within the project area would cumulatively exceed EKAPCD's significance thresholds. Of particular concern with regard to regional air quality impacts are emissions of PM₁₀, for which the regional is designated nonattainment. For these reasons, cumulative regional air quality impacts associated with short-term construction and decommissioning activities would be considered significant and unavoidable.

Biological Resources

There are a number of special-status species that currently utilize the project site and surrounding vicinity. Implementation of the project in addition to the other projects under way or proposed within Kern County would impact wildlife species, including desert tortoise, burrowing owl, raptors, desert kit fox, and migratory birds known to occur or with potential to occur on the project site. The project site contains habitat that support insects, rodents, and small birds that provide a prey base for raptors and terrestrial wildlife. In addition, based on the literature review and database search completed for the project, the region is known to support a diversity of special-status species, most of which are expected to utilize the project site on at least a transient basis. Given the number of present and reasonably foreseeable future development projects in the Antelope Valley, the project, when combined with other projects, would result in a significant and unavoidable cumulative loss of foraging and nesting habitat for special-status species. While the project would have less-than-significant impacts with the implementation of Mitigation Measures MM 4.4-1 through MM 4.4-14, when combined with related projects, the cumulative impact would be significant and unavoidable.

Noise

During construction of the project, average hourly construction noise levels during grading and other typical construction activities were found to be up to 84 dBA Leq at 50 feet from the construction activity. Sensitive land uses in the project site vicinity that would be exposed to project construction noise levels include the sparsely distributed residential dwellings that are in the vicinity of the project site. Chapter 8.36 of the Kern County Municipal Code includes established hours of construction and limitations on construction related noise impacts on adjacent sensitive receptors. Noise producing construction activities are prohibited between the hours of 9 p.m. and 6 a.m. on weekdays and 9 p.m. and 8 a.m. on weekends, when they are audible to a person with average hearing ability at a distance of 150 feet from the construction site, or if the construction site is within 1,000 feet of an occupied residential dwelling. Given the fact that construction activities could generate noise greater than the standard 65 dB(A) for the Kern County General Plan and 55 dB(A) for short period of times, temporary construction and decommissioning impacts are considered significant and unavoidable. Implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3 are designed to reduce impacts to the extent feasible during construction activities; however, impacts would still be significant and unavoidable.

Decommissioning activity noise levels could result in disturbances of noise sensitive receptors in the project vicinity similar to those during the loudest construction phases, if activities are not restricted to daytime hours. Thus, similar to construction, impacts during decommissioning of the project are also considered temporary significant and unavoidable.

Wildfire

With regard to impairment of an adopted emergency response plan or emergency evacuation plan, all of the related projects would be required to provide adequate emergency access in accordance with County Fire Code and Building Code requirements and prior to the issuance of a building permit. With regard to cumulative impacts related to exposure of project occupants to pollutant concentrations from a wildfire, while the proposed project is not within SRAs and/or High Fire Hazard Severity Zones, some related projects in the area may be. Related projects may also require associated infrastructure such as roads, fuel breaks, and power lines that could exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Some related projects could be proposed in areas that could expose people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire instability. However, these projects would be reviewed by Kern County for land use and zoning consistency and compliance with applicable requirements, and potentially analyzed for environmental impacts. The implementation of related projects would adhere to all fire codes to minimize the potential fire risk such as siting and design.

Furthermore, as previously mentioned, the project site is not classified as being within a high fire hazard severity zone, is located in rural, sparsely developed areas with limited population, is not located along an identified emergency evacuation route or within an adopted emergency evacuation plan, and would be in compliance with Fire Code and Building Code requirements. Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

6.2 Project Objectives

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (CEQA *Guidelines*, Section 15126.6(c)). As described in Chapter 3, *Project Description*, of this EIR the following objectives have been established for the project and will aid decision makers in the review of the project and associated environmental impacts.

- Establish a large-scale solar photovoltaic (PV) and energy storage power-generating facility of sufficient size and configuration to produce reliable electricity in an economically feasible and commercially financeable manner that can be marketed to different power utility companies.
- Develop a site that was partially previously disturbed (northern site) in proximity to transmission infrastructure in order to minimize environmental impacts.
- Use proven and established PV and energy storage technology that is efficient, requires low maintenance, and is recyclable.
- Maximize the use of existing transmission infrastructure.

- Ensure that the project can be constructed in a technologically feasible manner and operated in a manner that allows electricity to be provided at a competitive price.
- Assist Kern County in promoting its role as the State's leading producer of renewable energy;
- Provide green jobs to Kern County and the state of California;
- Site and design the project in an environmentally responsible manner consistent with current Kern County guidelines.
- Support California's efforts to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006, which requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under Senate Bill 32, which requires that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit by 2030.

6.3 Overview of the Project

The project would include the development a solar facility and associated infrastructure with the capacity to generate up to 300 megawatts (MW) of renewable electric energy and up to 3 gigawatt hours (GWh) of energy storage capacity, including associated energy storage facilities, on 2,006 acres of privately-owned land in the southern portion of Kern County, directly south of the community of Mojave. The proposed project would consist of PV panels arranged in a grid-pattern over the project site. The proposed project would include installation of PV panels that would be mounted on steel support posts that would be pile driven into the ground and connected to inverters.

The proposed project consists of two discontinuous sites, each of which would contain solar and energy storage facilities, which together would comprise the project site. The northern site is approximately 1,041 acres and the southern site is approximately 965 acres. The project would have two options for interconnection. Interconnection Option 1 includes a 230 kilovolt (kV) generation tie (gen-tie) constructed from an onsite project substation, located near Lone Butte Road. This option would connect to existing transmission lines with the connection equipment situated on up to 10 acres of land at the corner of United Street and Purdy Avenue, or travel west to the Southern California Edison (SCE) Windhub and/or Westwind Substation. The gen-tie facilities would be constructed within the study area shown in Figure 3-2. Interconnection Option 2 includes a 34.5 kV collection line that would be constructed from the western limits of the project site near Lone Butte Road and travel west to a step-up conversion station.

The project would include the following permanent components: solar PV generating facilities and solar modules; an energy storage facility; substations; operations and maintenance facility (O&M); an electrical collector system and inverters; generation-tie lines and an interconnection to the Statewide grid; and site access and security measures. See Chapter 3, *Project Description*, of this EIR, for a detailed project description.

6.4 Overview of Alternatives to the Project

Under CEQA, and as indicated in California Public Resources Code (PRC) Section 21002.1(a), the identification and analysis of alternatives to a project is a fundamental aspect of the environmental review process and is required to ensure the consideration of ways to mitigate or avoid the significant

environmental effects of a project. Based on the significant environmental impacts of the project, the aforementioned objectives established for the project, and the feasibility of the alternatives considered, including the No Project Alternative as required by CEQA, are considered in this chapter and summarized in **Table 6-1, Summary of Development Alternatives**. The Environmentally Superior Alternative, as required by CEQA, is described in Section 6.8, *Environmentally Superior Alternative*, below.

6.4.1 Alternative 1: No Project Alternative

The CEQA *Guidelines* require EIRs to include a No Project Alternative for the purpose of allowing decision makers to compare the effects of approving the project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the (up to) 300 MW solar PV facility with up to 3 GWh of energy storage on the 2,006-acre site would not occur. The No Project Alternative would not require three Conditional Use Permits (CUPs) for construction and operation of the proposed solar and energy storage project. An amendment to the Mojave Specific Plan Circulation Element would not be required. The No Project Alternative would maintain the current zoning, land use classifications, and existing land uses, which consist mostly of undeveloped desert vegetation. No physical changes would be made to the project site.

6.4.2 Alternative 2: General Plan/Specific Plan and Zoning Build-Out Alternative

Alternative 2, the General Plan/Specific Plan and Zoning Build-Out Alternative, would develop the project site to the maximum intensity allowed under the existing Kern County General Plan land use and zoning classifications. According to the Kern County General Plan, the 4.1 (Accepted County Plan Areas) land use designation applies to areas where specific land use plans have already been prepared and approved. In the case of the project site, the project is within the boundaries of both the Mojave Specific Plan and West Edwards Road Settlement Specific Plan. The portion of the project site within the Mojave Specific Plan is designated as Map Codes 8.5 (Resource Management – Minimum 20-Acre Size). The portion of the project site within the West Edwards Road Settlement Specific Plan is designated as Map Code 8.5 (Resource Management – Minimum 20-Acre Size) and 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope).

The project site has various zone classifications which include: A (Exclusive Agriculture), A-1 (Limited Agriculture), and A-1 H (Limited Agriculture – Airport Approach Height Combining), and A-1 FPS (Limited Agriculture – Floodplain Secondary Combining). No solar facilities would be developed under this alternative and, therefore, no zone changes for solar facility construction and operation would be required for this alternative. The project site would be developed in accordance with the existing agricultural zone designations.

Implementation of Alternative 2 would consist of developing the project site under the current land use classification of 4.1 (Mojave Specific Plan and West Edwards Road Settlement Specific Plan), 8.5 (Resource Management – Minimum 20-Acre Size) and 8.5/2.4 (Resource Management – Minimum 20-Acre Size/Steep Slope). The 8.5 (Resource Management – Minimum 20-Acre Size) land use designation applies primarily to open space lands containing important resources, such as wildlife habitat, scenic values, or watershed recharge areas. Typical uses include livestock grazing, farming and ranching, nature preserves, water storage and groundwater recharge areas, irrigated croplands, and open space and recreation. The

minimum allowable parcel size in the 8.5 (Resource Management – Minimum 20-Acre Size) land use designation is 20 acres gross, except lands subject to a Williamson Act Contract/Farmland Security Zone Contract, in which case the minimum parcel size is 80 gross acres. The 2.4 classification pertains to land with an average slope of 30 percent or steeper.

6.4.3 Alternative 3: Reduced Acreage Alternative

Under Alternative 3, the Reduced Acreage Alternative, the northern site of the project site would be developed with a solar facility and associated infrastructure with the capacity to generate up to 155 MW of renewable electric energy. Under this alternative, the southern site would not be developed for solar energy production and would remain undeveloped. The two options for gen-tie interconnection would remain unchanged. Development of the northern site would include an operations and maintenance (O&M) facility, installation of an energy storage facility and associated infrastructure, and an onsite substation that would be located in the northwest portion of the northern site, as under the project. Eliminating development of the southern site from the project would reduce the project's total generation capacity from 300 MW to 155 MW, and reduce the developed area from approximately 2,006 acres to 1,041 acres. Similar to the project, this alternative would require zone changes and CUPs for construction and operation of a commercial solar electrical generating facility, as well as the amendment to the Mojave Specific Plan Circulation Element to allow for the removal of the future road reservation along Purdy Avenue from United Street to Fifth Street.

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

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative, would involve the development of a number of geographically distributed small to medium solar PV systems (100 kilowatt-hours to 1 MW) within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout western Antelope Valley. Under this alternative, no new land would be developed or altered. However, depending on the type of solar modules installed and the type of tracking equipment used (if any), a similar or greater amount of acreage (i.e., greater than 2,006 acres of total rooftop area) may be required to attain project's capacity of 300 MW of solar PV generating capacity. Because of space or capital cost constraints, many rooftop solar PV systems would be fixed-axis systems or would not include the same type of sun-tracking equipment that would be installed in a freestanding utility-scale solar PV project and, therefore, would not attain the same level of efficiency with respect to solar PV generation. Alternative 4 would generate 300 MW of electricity, but it would be for onsite use only. This alternative assumes that rooftop development would occur primarily on commercial and industrial structures due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed onsite by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities.

Table 6-1, *Summary of Development Alternatives*, provides a summary of the relative impacts and feasibility of each alternative. A complete discussion of each alternative is also provided below.

TABLE 6-1: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Project	Construction and operation of a solar facility on approximately 2,006 acres would generate up to 300 MW of electricity and up to 3 GWh of energy storage capacity with a 230 kV gen-tie at the United Street conversion station and/or at the onsite substation. The power would then be delivered via 230 kV circuits to a grid interconnection point at the SCE Windhub Substation and/or Westwind Substation. Approval of three zones changes and three CUPs for construction and operation of commercial solar electrical generating facilities, and an Amendment to the Mojave Specific Plan Circulation Element would be required.	N/A
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	<ul style="list-style-type: none"> • Required by CEQA • Avoids need for zone changes and CUPs • Avoids all significant and unavoidable impacts • Greater impacts to greenhouse gas (GHG) emissions • Similar impacts to tribal cultural resources • Less impact in all remaining environmental issue areas • Does not meet any of the project objectives
Alternative 2: General Plan/Specific Plan and Zoning Build-Out Alternative	Project site would be developed to the maximum intensity allowed under the Kern County General Plan land use designations and zoning classifications and other existing applicable restrictions.	<ul style="list-style-type: none"> • Avoids need for zone changes and CUPs • Similar impacts to agriculture and forestry resources, mineral resources, tribal cultural resources, and wildfires • Less impact to aesthetics, hazards and hazardous materials, and land use and planning • Greater overall impacts in all remaining environmental issue areas

TABLE 6-1: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative 3: Reduced Acreage Alternative	Construction and operation of one solar facility on approximately 1,041 acres. This alternative is still expected to contain enough land to construct a solar array field capable of generating approximately 155 MW, with up to 3 GWh of energy storage. The project site would require zone change, CUP approval, and an Amendment to the Mojave Specific Plan Circulation Element.	<ul style="list-style-type: none"> • Similar impacts to hazards and hazardous materials, land use and planning, mineral resources, noise, public services, and tribal cultural resources • Greater overall impacts to GHG emissions • Less impact in all remaining environmental issue areas • Does not meet all the project objectives
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 300 MW of PV solar distributed on rooftops throughout western Antelope Valley. Electricity generated would be for on-site use only.	<ul style="list-style-type: none"> • Avoids need for zone change, Specific Plan Amendment to the Circulation Element, and CUP at the project site, but may require other entitlements (such as a CUP or variance) on other sites • Avoid significant and unavoidable impacts associated with aesthetics, air quality, biological resources, noise, and wildfire • Greater impacts to GHG emissions and land use and planning • Similar impacts to energy and tribal cultural resources • Less impact in all remaining issue areas • Does not meet the project objectives nor does this alternative account for the energy storage component of the project

6.5 Alternatives Considered and Rejected

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

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

6.5.1 Wind Energy Project Alternative

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

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

In addition, energy production from wind power would not require the significant water usage associated with coal, nuclear, and combined-cycle sources. Turbines used in wind farms for commercial production of electric power are usually three-bladed units that are pointed into the wind by computer-controlled motors. The wind farm would consist of a group of wind turbines placed where electrical power is produced. The individual turbines would be interconnected with a medium-voltage power collection system and a communications network. At a substation, the medium-voltage electrical current would be increased through a transformer before connection to the high-voltage transmission system. Compared with traditional energy sources, the environmental effects of wind power are relatively minor. However, wind farms would not decrease short-term construction-related air emissions. Wind turbines would also have the potential to affect avian species in the local area. In addition, in order for wind turbines to produce an equivalent 300 MW of power that the project would produce, the alternative would require more space than what the project site current accommodates. Consequently, the project site would need to be expanded.

As noted above, some of the project's objectives are to assist California in meeting its GHG emission reduction goals through establishing solar PV power-generating facilities to produce reliable electricity in an economically feasible and commercially financeable while minimizing environmental impacts and using proven and established PV technology that is efficient, requires low maintenance and is recyclable. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would substantially increase the significant aesthetic impacts associated with the project because wind turbines would be much taller than solar panels, require FAA lighting and are more visible from many viewpoints.
- It may conflict with the Mojave Air and Space Port, Kern County Airport Land Use Compatibility Plan and potentially the Edwards Air Force Base due to the heights of the turbines.
- It may result in additional/greater biological resources impacts to avian species than the project.
- It may generate long-term noise impacts to nearby sensitive receptors from rotating turbine blades.

6.5.2 Industrial Power Plant Alternative

This alternative would involve the development of a natural gas-fired power plant or plants (equivalent to 300 MW) in Kern County. Fossil fuel-powered plants are designed on a large scale for continuous operation. However, byproducts of industrial power plant operation need to be considered in both design and operation. When waste heat that results from the finite efficiency of the power cycle is not recovered and used as steam or hot water, it must be released to the atmosphere, and often uses a cooling tower as a

cooling medium (especially for condensing steam). The flue gas from combustion of the fossil fuels is discharged to the air and contains carbon dioxide and water vapor as well as other substances, such as nitrogen, nitrogen oxides, and sulfur oxides. Furthermore, unlike the project, fossil fuel-powered plants are major emitters of GHGs. In addition, industrial power plants generally involve the construction of large structures, such as cooling towers and gas stacks, as well as a large number of employees to operate the facility on a 24/7 basis 365 days a year. Accordingly, the development of an industrial power plant would typically result in greater adverse impacts related to: (1) aesthetics and the local visual setting of the project area; (2) air quality and GHG emissions; (3) land use and planning conflicts with the rural development of the surrounding area; (4) noise from the plant operations; (5) traffic from increased employment at the facility; and (6) demand on public utilities, including water and waste disposal.

As noted above, some of the project's objectives are to assist California in meeting its GHG emission reduction goals through establishing solar PV power-generating facilities to produce reliable electricity in an economically feasible and commercially financeable while minimizing environmental impacts and using proven and established PV technology that is efficient, requires low maintenance and is recyclable. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would result in additional/greater impacts than the project including aesthetics, air quality, GHG emissions, land use and planning, noise, transportation, and public utilities, including water use and disposal.
- Depending on siting, it may also result in greater biological resources impacts than the project.
- It may conflict with the Mojave Air and Space Port, Kern County Airport Land Use Compatibility Plan and potentially the Edwards Air Force Base due to the heights of the cooling towers and smoke stacks.
- It would not contribute to the statewide renewable energy and GHG emission reduction objectives as this alternative would use non-renewable energy to produce electricity.

6.5.3 Alternative Site

This alternative would involve the development of the project on another site located within Kern County, other than constructing rooftop distributed generation systems. Although undetermined at this time, the alternative project site would likely be located in western Antelope Valley, similar to the project. This alternative is assumed to involve construction of a 300 MW PV solar facility with up to 3 GWh of energy storage on a site totaling 2,006 acres. CEQA *Guidelines* 15126.6(f)(2)(a) states that the key and initial step in considering an alternative site is whether “any of the significant effects of the project would be avoided or substantially lessened” in relocating the project, while remaining consistent with the same basic objectives of the project.

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

In addition, alternative sites for the project are not considered to be “potentially feasible,” as there are no suitable sites within the control of the project proponent that would reduce project impacts. The potential amount of available, similar sites is further reduced because unlike the project, alternative sites may not include sites with close proximity to transmission infrastructure. Therefore, this alternative was eliminated because it would not avoid or substantially reduce the significant environmental effects of the project.

6.6 Analysis Format

In accordance with CEQA *Guidelines* Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less, similar, or greater than the corresponding impacts of the project. Furthermore, each alternative is evaluated to determine whether the project objectives identified in Chapter 3, *Project Description*, of this EIR, would be mostly attained by the alternative. The project’s impacts that form the basis of comparison in the alternatives analysis are those impacts which represent a conservative assessment of project impacts. The evaluation of each of the alternatives follows the process described below.

- a) The net environmental impacts of the alternative after implementation of reasonable mitigation measures are determined for each environmental issue area analyzed in this EIR.
- b) Post-mitigation significant and less than significant environmental impacts of the alternative and the project are compared for each environmental issue area as follows:
 - Less: Where the impact of the alternative after feasible mitigation would be clearly less adverse than the impact of the project, the comparative impact is said to be “less.”
 - Greater: Where the impact of the alternative after feasible mitigation would be clearly more adverse than the impact of the project, the comparative impact is said to be “greater.”
 - Similar: Where the impacts of the alternative after feasible mitigation and the project would be roughly equivalent, the comparative impact is said to be “similar.”
- c) The comparative analysis of the impacts is followed by a general discussion of whether the underlying purpose for the project, as well as the project’s basic objectives would be substantially attained by the alternative.

Table 6-2, *Comparison of Alternatives*, provides a summary and side-by-side comparison of the project with the impacts of each of the alternatives analyzed. Note that in Alternatives 1 through 4 in Table 6-2, the references to “less, similar, or greater,” refer to the impact of the alternative compared to the project, and the impacts “no impact (NI), less than significant (LTS), or significant and unavoidable (SU),” in the parentheses refer to the significant impact of the specific alternative.

TABLE 6-2: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: General Plan/Specific Plan and Zoning Build- Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility- Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and unavoidable (project and cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agriculture and Forestry Resources	Less than significant	Less (NI)	Similar (LTS)	Less (LTS)	Less (NI)
Air Quality	Significant and unavoidable – construction (project and cumulative)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Biological Resources	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Cultural Resources	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Energy	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Similar (LTS)
Geology and Soils	Less than significant with mitigation	Less (NI)	Greater (SU)	Less (LTS)	Less (LTS)
Greenhouse Gas Emissions	Less than significant	Greater (LTS)	Greater (LTS)	Greater (LTS)	Greater (LTS)
Hazards and Hazardous Materials	Less than significant with mitigation	Less (NI)	Less (LTS)	Similar (LTS)	Less (LTS)
Hydrology and Water Quality	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)

TABLE 6-2: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: General Plan/Specific Plan and Zoning Build- Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility- Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Land Use and Planning	Less than significant with mitigation	Less (NI)	Less (NI)	Similar (LTS)	Greater (LTS)
Mineral Resources	Less than significant	Less (NI)	Similar (LTS)	Similar (LTS)	Less (LTS)
Noise	Significant and unavoidable construction (project) Less than significant with mitigation (cumulative)	Less (NI)	Greater (SU)	Similar (SU)	Less (LTS)
Public Services	Less than significant with mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Transportation	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Tribal Cultural Resources	No impact	Similar (NI)	Similar (NI)	Similar (NI)	Similar (NI)
Utilities and Service Systems	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Wildfires	Significant and unavoidable (cumulative only)	Less (NI)	Similar (SU)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	Some	None	Some
NI = No Impact LTS = Less Than significant SU = Significant and Unavoidable					

6.7 Impact Analysis

6.7.1 Alternative 1: No Project Alternative

Environmental Impact Analysis

Aesthetics

Under the No Project Alternative, no development would take place on the project site. The project site would remain in its current state as undeveloped land and no change to the scenic vistas or existing visual character of the site would occur. Impacts to scenic resource and daytime and nighttime views in the area would not occur. Therefore, there would be no impact and the No Project Alternative would result in less impact to aesthetics compared to the project.

Agriculture and Forestry Resources

Under the No Project Alternative, the project site would remain undeveloped and solar panels and an energy storage system would not be installed. The project site would remain in its current state, as largely undeveloped desert land. As such, the No Project Alternative would not involve changes to the existing environment which could result in the conversion of Farmland or forest land to non-agricultural or non-forest uses. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to agriculture and forestry resources compared to the project.

Air Quality

Under the No Project Alternative, the project site would remain undeveloped and there would be no construction activities or operational activities that would generate air emissions. No exceedance of the EKAPCD's significance thresholds for PM₁₀ and PM_{2.5} would occur, no conflict with the attainment standard, nor would the No Project Alternative contribute to a cumulative net increase of criteria pollutant in the projects' region. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to air quality compared to the project.

Biological Resources

Under the No Project Alternative, the project site would remain undeveloped and existing biological resources on the project site, including special-status plant and wildlife species would remain undisturbed since no construction or operation would occur. The project site would remain in its current state, as undeveloped land containing desert vegetation, and would not contribute to a cumulative loss of wildlife species, including desert tortoise, burrowing owl, raptors, desert kit fox, and migratory birds known to occur or with potential to occur on the project site. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to biological resources compared to the project.

Cultural Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. Therefore, disturbance to potential historical resources, archeological resources, or human remains located onsite would not occur and this alternative would not require mitigation. There would be no impact and the No Project Alternative would result in less impacts related to cultural resource compared to the project.

Energy

Under the No Project Alternative, the project site would remain undeveloped and no energy consumption activities would occur. As such, the No Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. However, it should be noted that the No Project Alternative would not support the goals of the Renewable Portfolio Standard. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to energy compared to the project.

Geology and Soils

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. As such, the No Project Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, and landslides; result in substantial soil erosion or loss of topsoil; result in on- or offsite landslides, be located on expansive soil; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. Therefore, there would be no impact and the No Project Alternative would result in fewer impact related to geology and soils compared to the project.

Greenhouse Gas Emissions

Under the No Project Alternative, emissions associated with construction and operation of a solar energy facility and energy storage system would not occur. Therefore, those emissions that contribute to GHGs would be eliminated and no impacts would occur related to generating emissions that may have a significant impact on the environment or consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. However, the potential offset of GHG emissions resulting from operation of the solar power generating facility would not be realized. Impacts would be less than significant under this alternative; however, impacts from implementation of this alternative would be greater than those of the project as it would not offset GHG emissions.

Hazards and Hazardous Materials

Under the No Project Alternative, the project site would remain undeveloped, and no construction or operational activities would occur. The project site would remain in its current condition. As such, this alternative would not: involve the routine transport, use, or disposal of hazardous materials associated with the project site; create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; emit hazardous emissions or handling hazardous materials within 0.25 miles of an existing or proposed school; create a significant hazard to the public or environment; result in a safety hazard or excessive noise for people residing or working in the project area for a project located within the vicinity of a private airstrip;

impair implementation of or interfere with an adopted emergency response plan or emergency evacuation plan; expose people or structures to significant risk of loss, injury, or death involving wildland fires; or generate vectors or have a component that includes agricultural waste. Therefore, there would no impact and the No Project Alternative would result in less impacts related to hazards and hazardous materials compared to the project.

Hydrology and Water Quality

Under the No Project Alternative, the project site's existing hydrology and water quality would remain unchanged as no development or ground disturbance would occur on the project site. As such, this alternative would not violate water quality standards or waste discharge requirements; substantially alter the existing drainage patterns of the site or area in a manner that would result in substantial erosion and/or sedimentation onsite or offsite, result in flooding onsite or offsite; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage system; impede or redirect flood flows. Therefore, there would be no impact and the No Project Alternative would result in less impact related to hydrology and water quality compared to the project.

Land Use and Planning

The No Project Alternative would not develop any new uses at the project site, and would thus not require a zone change or CUP. As such, the No Project Alternative would not cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, there would be no impact and the No Project Alternative would result in less impact related to land use and planning compared to the project.

Mineral Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. There are no mineral resources on the project site or in the project area. As such, the No Project Alternative would not result in the loss of availability of locally important mineral resource recovery site delineated on a local General Plan, Specific Plan, or other land use plan. Therefore, there would be no impact and the No Project Alternative would result in less impact related to mineral resources compared to the project.

Noise

Under the No Project Alternative, the project site would remain undeveloped. Noise sources from construction and operation would not be present onsite, and existing noise conditions would remain the same. As such, the No Project Alternative would not result in generation of a substantial temporary or permanent increase in ambient noise levels or generate excessive ground-borne vibration. Therefore, there would be no impact and the No Project Alternative would result in less impact related to noise compared to the project.

Public Services

Under the No Project Alternative, the project site would remain undeveloped and no new demand for fire or police protection services would occur. As such, the No Project Alternative would not result in the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and police protection. Therefore, there would be no impact and the No Project Alternative would result in less impact related to public services compared to the project.

Transportation

Under the No Project Alternative, the solar facilities would not be constructed and this alternative would not introduce construction and operational-related trips. Existing traffic patterns and volumes on nearby roadways would remain unchanged. As such, the No Project Alternative would not conflict with a program, plan, ordinance or policy addressing the circulation system, nor would the No Project Alternative conflict or be inconsistent with CEQA *Guidelines* Section 15064.3(b). In addition, the No Project Alternative would not substantially increase hazards due to a geometric design feature or result in inadequate emergency access. Therefore, there would be no impact and the No Project Alternative would result in less impact related to transportation than the project.

Tribal Cultural Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. According to record searches and tribal resource consultations, no tribal resources are present on the project site. As such, the No Project Alternative would not cause a substantial adverse change in the significant of a tribal cultural resources with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k) or as a resource determined by the lead agency. Therefore, there would be no impact and the No Project Alternative would result in similar impacts related to tribal cultural resource compared to the project.

Utilities and Service Systems

Under the No Project Alternative, the solar facilities would not be constructed and there would be no new demand for utilities and service systems on the project site. As such, the No Project Alternative would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; generate solid waste in excess of state or local standards; or conflict with federal, State, and local management and reduction statutes and regulations related to solid waste. Therefore, there would be no impact and the No Project Alternative would result in less impact related to utilities and service systems compared to the project.

Wildfires

Under the No Project Alternative, the solar facilities would not be constructed. As such, the No Project Alternative would not expose occupants to pollutant concentrations from a wildfire; require the installation or maintenance of associated infrastructure; or expose people or structures to significant risks. Therefore, there would be no impact and the No Project Alternative would result in less impact related to wildfires compared to the project.

Comparison of Impacts

The No Project Alternative would avoid creating all of the significant and unavoidable impacts associated with the project. This alternative would result in similar impacts related to tribal cultural resources. This alternative would result in less impact to all remaining environmental issue areas with the exception of

GHGs; since this alternative would not offset GHGs through the operation of a solar energy facility, impacts to GHGs would be greater under this alternative.

Relationship to Project Objectives

The No Project Alternative would not achieve any of the project objectives listed above in Section 6.2, *Project Objectives*, including assisting California in meeting its GHG emissions reduction goals. Although this alternative would create less environmental impacts overall, the objectives that shape the project would not be realized under this alternative.

6.7.2 Alternative 2: General Plan/Specific Plan and Zoning Build-Out Alternative

Environmental Impact Analysis

Aesthetics

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site. Under this alternative, there would be no zoning change, therefore increasing the total amount of agricultural land in Kern County. Development of the project site with agricultural uses would be visually similar to the types of uses that are within the project area and, thus, potential impacts to visual character would be reduced under this alternative. As such, significant and unavoidable impacts related to visual resources would be eliminated under this alternative. In addition, as agricultural uses would be similar to those in the surrounding area, this alternative would not combine with cumulative projects to create a significant unavoidable cumulative impact related to light and glare. Therefore, impacts would be less than significant under the General Plan/Specific Plan and Zoning Build-Out Alternative and, thus, this alternative would result in less aesthetic impacts compared to the project.

Agriculture and Forestry Resources

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site. Under this alternative, there would be no zoning change, therefore increasing the total amount of agricultural land in Kern County. As noted in Section 4.2, *Agricultural Resources*, the project site is not under a Williamson Contract and, therefore, development under this alternative would not conflict with a Williamson Act contract. Furthermore, development under Alternative 2 would be consistent with the existing zoning and the portions of the project site designated as A (Exclusive Agriculture) would remain. Therefore, impacts would

be less than significant under the General Plan/Specific Plan and Zoning Build-Out Alternative and, thus, this alternative would result in similar agricultural resource impacts compared to the project.

Air Quality

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site

Both the project and the General Plan/Specific Plan and Zoning Build-Out Alternative would result in short-term construction emissions. The conversion of the project site to agricultural uses would require similar heavy equipment to the project. However, the conversion of agricultural uses would not require haul truck trips to the same extent at the project as solar panels and other project components would not need to be hauled to the project site. While the reduced number of haul truck trips would reduce the overall amount of air quality emissions, as similar heavy equipment on a daily basis would be required under this alternate as with the project, impacts would remain significant and unavoidable for project-level and cumulative construction impacts. Operational emissions associated with the proposed agricultural uses under the General Plan/Specific Plan and Zoning Build-Out Alternative would be greater due to routine emissions associated with agricultural vehicles, on-going ground disturbance, and livestock emissions, etc. Given this increase, this alternative would result in greater air quality impacts in the air basin than the project.

As it relates to impacts on implementation of the applicable air quality plan, since project-level and cumulative construction impacts would be significant and unavoidable, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in construction emissions of a magnitude that would obstruct the air quality planning goals set forth by EKAPCD. Therefore, similar to the project, impacts would be significant and unavoidable.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations. In particular, during construction of this alternative, it is possible that onsite workers could be exposed to Valley Fever as fugitive dust is generated during construction. However, as this alternative would not require any permits, dust-minimizing techniques would not be implemented and impacts related to Valley Fever would not be reduced to a less than significant level. As with the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in less-than-significant impacts related to toxic air contaminants, localized pollutant concentrations, and asbestos.

Overall, impacts to air quality under the General Plan/Specific Plan and Zoning Build-Out Alternative would likely remain significant and unavoidable and result in greater overall impacts to air quality than the project due to the greater construction impacts related to valley fever and operational emissions associated with the agricultural uses given that mitigation measures would not be implemented.

Biological Resources

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This

alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

Conversion of the undeveloped site to agricultural uses would affect biological resources on the project site as this alternative would replace all native vegetation with agricultural crops or grazing areas for these areas of the project site. Agricultural uses would also result in increased human presence as opposed to the unmanned solar facility that is only visited occasionally for maintenance and panel washing.

As it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, as with the project, the General Plan and Zoning Build-Out Alternative would have an impact to alkali mariposa lily, desert tortoise, burrowing owl, Swainson's hawk, loggerhead shrike, LeConte's thrasher, nesting birds, desert kit fox, recurved larkspur, Barstow woolly sunflower, pale-yellow layia, sagebrush Loefflingia, Latimer's woodland-gilia, Joshua trees, Wiggins' cholla, beavertail pricklypear, American badger, and raven. To convert portions of the project site to agricultural uses, this alternative would involve greater ground disturbance as opposed to the project that would have some no build areas. As this alternative would not require any permits, this alternative would not implement Mitigation Measures MM 4.4-1 through MM 4.4-10; therefore, impacts would be potentially significant and unavoidable as it is unknown if conversion of the land to agricultural uses could result in the take of candidate, sensitive, or a special-status species. In addition, as the General Plan/Specific Plan and Zoning Build-Out Alternative would not install any solar uses, Mitigation Measures MM 4.4-11 and MM 4.4-12 would not be implemented.

With regard to impacts on any riparian habitat or other sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW (California Department of Fish and Wildlife) or U.S. Fish and Wildlife Service (USFWS), conversion to agricultural uses under this alternative would not result in significant impacts related to approximately 4.9 acres of CDFW- and Regional Water Quality Control Board (RWQCB)-jurisdictional areas present on the project site. As such, this alternative would not implement Mitigation Measures MM 4.4-13 and MM 4.4-14 and impacts would be less than significant.

Conversion to agricultural uses under this alternative would also not create a significant impact related to state or federally protected wetlands, the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, and consistency with local policies and ordinances protecting biological resources. The General Plan/Specific Plan and Zoning Build-Out Alternative, as with the project, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

Based on the above, impacts under the General Plan/Specific Plan and Zoning Build-Out Alternative would result in significant and unavoidable impacts to biological resources at the project-level and cumulative level as no mitigation measures would be in place to reduce potential impacts to candidate, sensitive, or a special-status species. Therefore, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in greater impacts related to biological resources compared to the project.

Cultural Resources

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This

alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

To convert portions of the project site to agricultural uses, this alternative would involve greater ground disturbance as opposed to the project that would have some no build areas. While no historical or archaeological resources were identified, ground-disturbing activities associated with the project have the potential to encounter undocumented archaeological resources that could qualify as historical resources. As this alternative would not require any permits, the General Plan/Specific Plan and Zoning Build-Out Alternative would not implement Mitigation Measures MM 4.5-1 through MM 4.5-4. However, should buried archaeological deposits be uncovered during project ground disturbance, and should such resources qualify as historical resources under CEQA, they could be subject to significant impacts. Therefore, without implementation of mitigations measures, potential impacts to archaeological resources would be significant and unavoidable. In addition, there is no indication that any particular location within the project site has been used for purposes of human burial in the recent or distant past. However, in the unlikely event that human remains are inadvertently discovered during project construction activities, this alternative would comply with Health and Safety Code, Section 7050.5, which includes requirements similar to Mitigation Measure MM 4.5-5 and would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in greater cultural resource impacts compared to the project as this alternative would not implement mitigation measures and greater ground disturbance required under this alternative could affect undocumented subsurface cultural resources.

Energy

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

The portions of the project site that would be developed with agricultural uses would require similar heavy duty construction equipment, but fewer haul truck trips during construction of this alternative and more intensive operational activities related to the consumption of natural gas and transportation-related energy (petroleum-based fuels). However, the General Plan/Specific Plan and Zoning Build-Out Alternative would involve less-intensive construction activities related to electricity usage and operational electricity usage associated with the greater consumption of water associated with the proposed agricultural uses would occur. The General Plan/Specific Plan and Zoning Build-Out Alternative would not be required to implement Mitigation Measure MM 4.3-1. Overall, the agricultural uses would require less energy consumption.

Similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would be required to comply with the California Air Resources Board's (CARB) Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. In addition, the fuel efficiency of the vehicles being used by the employees and visitors under this alternative is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. As such, the wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant under this alternative. Furthermore, similar to the project, the General Plan

and Zoning Build-Out Alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Based on the above, impacts under the General Plan/Specific Plan and Zoning Build-Out Alternative related to energy would be less than significant, but greater than those of the project as the project site would not generate renewable energy, and would therefore, not assist the state in meeting its renewable energy generation goals to the fullest extent as compared to the project.

Geology and Soils

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site. This alternative would also not construct the O&M buildings or other ancillary facilities as agricultural uses would be developed onsite. However, agricultural uses would require a greater number of people to access the project site during operation of this alternative.

Construction of the General Plan/Specific Plan and Zoning Build-Out Alternative would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2016 Edition (CCR Title 24). Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with this alternative. The General Plan/Specific Plan and Zoning Build-Out Alternative would not be required to implement Mitigation Measures MM 4.7-1 and MM 4.7-2 as no structures are proposed to be developed under the alternative. Furthermore, the General Plan/Specific Plan and Zoning Build-Out Alternative would adhere to requirements of the National Pollutant Discharge Elimination System (NPDES), which includes requirements similar to Mitigation Measure MM 4.7-3 and would comply with Kern County Grading Code (Section 17.28.070), which includes requirements similar to Mitigation Measure MM 4.7-4 in order to address potential soil erosion and loss of top soil. Additionally, no septic tanks are proposed under this alternative. As it relates to unique paleontological resource or site or unique geologic feature, similar to the project, under the General Plan/Specific Plan and Zoning Build-Out Alternative any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. As this alternative would not require any permits, the General Plan/Specific Plan and Zoning Build-Out Alternative would not implement Mitigation Measures MM 4.7-5 through MM 4.7-7. However, if significant vertebrate fossils are encountered during project implementation, disturbance of such resources would result in a potentially significant impact to paleontological resources. Therefore, without implementation of mitigations measures, potential impacts to paleontological resources would be significant and unavoidable.

Based on the above, impacts to geology and soils would be slightly greater under this alternative compared to the project as the General Plan/Specific Plan and Zoning Build-Out Alternative would result in greater initial soil disturbance during construction and mitigation measure would not be implemented to reduce potential impacts to paleontological resources.

Greenhouse Gas Emissions

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height

Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

As portions of the General Plan/Specific Plan and Zoning Build-Out Alternative would develop land uses that would emit GHG emissions throughout the life of the project (from increased water usage, traffic, operation of agricultural equipment, and livestock emissions), this would result in a net gain of GHG emissions within California. Unlike the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would not assist an off-taker in reducing its GHG emissions as consistent with the California Global Warming Solutions Act. Therefore, although both this alternative and the project would result in less-than-significant GHG emissions impacts, impacts from the General Plan and Zoning Build-Out Alternative would be greater when compared to the project since the beneficial reduction in GHG emissions would not occur as with the project.

Hazards and Hazardous Materials

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

There are no known hazardous materials in the soil that would be disturbed during construction of the agricultural uses. Agricultural uses on the project site could require the use of hazardous materials during operation including herbicides and pesticides. However, as with the project, standard Best Management Practices (BMPs) would ensure that exposure to potentially hazardous materials used or found onsite would be reduced or minimized. As the alternative would not include handling of any equipment that would be required for installation of a solar project or result in the generation of construction debris, the General Plan/Specific Plan and Zoning Build-Out Alternative would not implement Mitigation Measures MM 4.9-1 and MM 4.17-1. In addition, the General Plan/Specific Plan and Zoning Build-Out Alternative would be required to use herbicides and pesticides that are approved by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service for use in California, similar to the requirements under Mitigation Measure MM 4.9-2. Impacts related to significant hazards to the public or environment would be less than significant.

Although the General Plan/Specific Plan and Zoning Build-Out Alternative would develop agricultural uses, and typically these uses would not require development of buildings that would potentially conflict with the Airport Influence Area for the Mojave Air and Space Port Airport, this alternative would be required to comply with the County's ALUCP and applicable FAA regulations regarding project approval to ensure that there is no conflict with airport operations and no safety hazards are presented, similar to the requirements under Mitigation Measure MM 4.9-3. In addition, the Edwards Air Force Base would have to be notified of construction of this alternative to ensure no conflict with their operations. With adherence to project notification requirements the impacts related to the Airport Land Use Compatibility Plan would be less than significant.

As it relates to wildland fires, the project site is not located within a high fire hazard severity zone. In addition, the General Plan/Specific Plan and Zoning Build-Out Alternative includes the development of

agricultural uses, which would not increase the potential for wildfires from occurring on the project site. Therefore, this alternative would not implement Mitigation Measure MM 4.14-1.

Impacts under the General Plan/Specific Plan and Zoning Build-Out Alternative and the project would result in less-than-significant impacts and the potential impacts from hazards and hazardous materials would be less compared to the project.

Hydrology and Water Quality

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

The conversion of the project site to agricultural uses would not substantially increase impervious surfaces. Conversion of the project site to agricultural uses would likely result in similar ground disturbance and erosion potential. However, operation of the agricultural uses proposed under this alternative would likely involve continued ground disturbance from activities such as grazing and plowing, whereas the project's operation would not; thereby, posing a greater threat to water quality. Operation of agricultural uses could also affect groundwater quality through the application of pesticides or herbicides. Once operational, agricultural uses would result in greater demand under the General Plan/Specific Plan and Zoning Build-out Alternative than under the project.

Similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would include implementation of BMPs to prevent the occurrence of soil erosion and discharge and would adhere to requirements of the NPDES, which includes requirements similar to Mitigation Measure MM 4.7-3. As the alternative would not include handling of any equipment that would be required for installation of a solar project, the General Plan/Specific Plan and Zoning Build-Out Alternative would not implement Mitigation Measure MM 4.9-1. During operation of this alternative, agricultural uses would be developed and little to no impervious surfaces would be on the project site; as such, the General Plan/Specific Plan and Zoning Build-Out Alternative would not require implementation of Mitigation Measure MM 4.10-1.

As it relates to groundwater supplies, water requirements under the General Plan/Specific Plan and Zoning Build-Out Alternative, overall construction and operation related water requirements would be greater under this alternative as compared to the project as agricultural uses are more water intensive uses than the construction and operation of solar panels. Similar to the project, water demands would be met by developing onsite groundwater and would draw from the Fremont Valley Groundwater Basin (FVGB) or importing water from the MPUD. As described in Section 4.10, *Hydrology and Water Quality*, the amount of water stored in the FVGB is relatively large compared to the proposed demand associated with the project and according to the water supply assessment for the Project, the commitment from MPUD to supply the project with water from Well 30, and data supporting the ability of the underlying aquifer to support development of an onsite groundwater well without adverse effects, there is sufficient water available for the proposed project through 2040. It is assumed that water demand under the General Plan/Specific Plan and Zoning Build-Out Alternative would also be sufficiently supplied by either the water stored in the FVGB or imported from the MPUD. Therefore, this alternative would not substantially deplete ground water supplies or interfere substantially with groundwater recharge. Furthermore, this alternative would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater

management plan as the General Plan/Specific Plan and Zoning Build-Out Alternative would require BMPs and drainage control requirements that would be consistent with the Basin Plan.

With regard to existing drainage patterns, installation of the agricultural uses under the General Plan/Specific Plan and Zoning Build-Out Alternative would alter existing onsite drainage patterns and flowpaths to some degree, and could alter the way that stormwater from upgradient flows across the project site during major events. Similar to the project, the General Plan and Zoning Build-Out Alternative would adhere to requirements of the NPDES, which includes requirements similar to Mitigation Measure MM 4.7-3. In addition, as agricultural uses would be developed, little to no impervious surfaces would be on the project site, the General Plan/Specific Plan and Zoning Build-Out Alternative would not require implementation of Mitigation Measure MM 4.10-1.

Overall, although this alternative would result in less-than-significant impacts, the General Plan and Zoning Build-Out Alternative would result in greater impacts to hydrology and water quality compared with the project as operation of the agricultural uses proposed under this alternative would likely involve continued ground disturbance from activities such as grazing and plowing.

Land Use and Planning

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

Unlike the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would not conflict with the existing land use at the project site, because the site would be developed with the current General Plan land use and zoning designations. This alternative would be consistent with current zoning as well as existing land use plans, policies, and regulations and no CUP would be required. Therefore, there would be no impact and the General Plan/Specific Plan and Zoning Build-Out Alternative would result in less impact related to land use and planning compared to the project.

Mineral Resources

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

The establishment of agricultural uses onsite would have a similar potential as the project to impact the future extraction of mineral resources on adjacent lands. There are no identified mineral resources on the project site and the project would result in less-than-significant impacts to mineral resources; therefore, the General Plan/Specific Plan and Zoning Build-Out Alternative would result in similar impacts to mineral resources compared to the project.

Noise

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

During construction, impacts under this alternative would be similar to the impacts of the project, as the conversion of the project site to agricultural uses would require similar heavy equipment as required for the construction of the project. However, the conversion of agricultural uses would not require haul truck trips to the same extent at the project as solar panels and other equipment would not need to be hauled to the project site. During operation, with regard to the proposed agricultural uses, this alternative would generate greater noise than the project associated with the daily operation of agricultural equipment and worker vehicles.

Under this alternative, similar to the proposed project, construction activities have the potential to result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards and, thus, impacts would be significant and unavoidable, similar to the project. As this alternative would not require any permits, the General Plan/Specific Plan and Zoning Build-Out Alternative would not implement Mitigation Measures MM 4.13-1 through MM 4.13-3, which are designed to reduce impacts to the extent feasible during construction activities. Thus, impacts would still be significant and unavoidable. As with the project, operational activities under the General Plan/Specific Plan and Zoning Build-Out Alternative would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards. Impacts would be less than significant. In addition, the closest offsite occupied residential structures would be located 200 feet from construction activities. Note that while the property boundaries of sensitive receptors are located 58 feet from the project site boundary, the nearest physical structure is 200 feet from the project site boundary. As such, the vibration levels at the nearest residences would not reach the vibration level threshold for older residential structures. A such, vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers.

Based on the above, both the project and this alternative would result in significant and unavoidable construction impacts, but in greater significant and unavoidable construction impacts as mitigation measures would not be implemented and greater less-than-significant operational impacts due to the proposed agricultural uses which involve an increased ongoing use of agricultural equipment and worker traffic during operation of the alternative.

Public Services

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

While construction of the General Plan/Specific Plan and Zoning Build-Out Alternative would result in a similar number of construction workers on the project site, the General Plan/Specific Plan and Zoning Build-Out Alternative includes the development of agricultural uses, which would not increase the potential

for wildfires from occurring on the project site during construction. Therefore, this alternative would not implement Mitigation Measure MM 4.14-1. During operation, the portion of the project site that would be developed with agricultural uses could result in a slight increase in long-term population compared to the project as agricultural uses would require more workers on the project site. However, this slight increase would not require the development of new or physically altered KCFD or KCSO facilities. The General Plan/Specific Plan and Zoning Build-Out Alternative would pay Kern County any applicable fees, similar to the requirements under Mitigation Measure MM 4.14-2. Impacts related to fire protection would be less than significant.

With regard to police protection, while the project site is located in an area that is surrounded by undeveloped and rural communities and is unlikely to attract attention, construction activities related to installation of solar panels would increase traffic volumes along SR-58 and SR-14, similar to the project. With regard to the agricultural uses, there would be limited construction-related traffic for the conversion of the project site to agricultural uses as haul truck trips would be reduced under this alternative. As such, this alternative would not have a significant adverse effect on the Kern County Sheriff's Office (KCSO) protective service provision or California Highway Patrol (CHP)'s ability to patrol the highways. During operation of this alternative, agricultural uses would increase operational traffic due to the increase employees travelling to the project site. However, the increase is not likely to have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

Although this alternative would result in less-than-significant impacts, the General Plan/Specific Plan Build-Out Alternative would result in greater impacts to public services compared to the project due to proposed agricultural uses, which results in an increase in population during operation as compared to the project.

Transportation

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

With regard to the agricultural uses, there would be limited construction-related traffic for the conversion of the project site to agricultural uses as haul truck trips would be reduced under this alternative. Once operational, the General Plan/Specific Plan and Zoning Build Out Alternative would involve more routine vehicle trips associated with agricultural uses. Similar to the project, during construction of the General Plan/Specific Plan and Zoning Build-Out Alternative, which would require a reduced number of construction trips for the conversion of the project site to agricultural uses, all study roadway segments are forecasted to operate at Caltrans- or County-defined acceptable Level of Service (LOS) D conditions or better. As construction impacts would be less than significant, operation of this alternative would also have a less-than-significant impact on area roadways.

With regard to consistency with CEQA *Guidelines* Section 15064.3(b), as regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a transportation impact. Therefore, impacts related to CEQA *Guidelines* Section 15064.3(b) would be less than significant under the General Plan/Specific Plan and Zoning Build-Out Alternative, as with the project.

As it relates to increasing hazards due to a geometric design feature or incompatible use, as the General Plan/Specific Plan and Zoning Build-Out Alternative does not include the installation of solar panels on the project site, this alternative would not require the use of oversized vehicles during construction, and, as such, would not create a hazard to the public and implementation of Mitigation Measure MM 4.15-1 would not be required. With regard to emergency access, as this alternative would not cause a significant increase in congestion or significance worsen the existing service levels at intersection roadways, the General Plan/Specific Plan and Zoning Build-Out Alternative would have a less-than significant impact on emergency access during construction and operation.

Therefore, although both this alternative and the project would result in less-than-significant impacts, impacts to transportation from the General Plan/Specific Plan and Zoning Build-Out Alternative would be greater when compared to the project as operational agricultural uses would increase the amount of trips to the project site as compared to the project.

Tribal Cultural Resources

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

According to record searches and tribal resource consultations, no tribal resources are present on the project site. Therefore, there would be no impact to tribal cultural resources and impacts to tribal cultural resources under the General Plan/Specific Plan and Zoning Build-Out Alternative would be similar to the project.

Utilities and Service Systems

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

The proposed agricultural uses would not likely increase impervious surfaces, and, as such, would not increase surface runoff. However, water demand from the proposed agricultural uses would increase substantially in comparison to the project due to the consistent demand from agricultural uses. Additionally, the proposed agricultural uses under this alternative would produce solid waste associated with the employees operating agricultural uses that would need to be disposed of at local landfills.

As with the project, conversion of the project site to agricultural uses would require water usage for dust suppression as well as minimal generation of wastewater, usage of electrical power, natural gas, and telecommunications. In addition, construction of the General Plan/Specific Plan and Zoning Build-Out Alternative would not substantially alter stormwater drainage. With regard to operation, the agricultural uses would substantially increase water demand. Wastewater and solid waste generation associated with this alternative would also slightly increase compared to the project due to the increase in the number of employees associated with the agricultural uses. However, as agricultural uses would be developed, little to no impervious surfaces would be on the project site and the General Plan/Specific Plan and Zoning Build-

Out Alternative would not require implementation of Mitigation Measure MM 4.10-1, which requires preparation of a drainage plan to reduce potential increases in stormwater runoff onsite and would detail any necessary physical structures required to control stormwater.

Although both the project and this alternative would result in less-than-significant impacts, the General Plan/Specific and Zoning Build-Out Alternative would result in greater impacts to utilities and service systems compared to the project as this alternative would have an increased demand on the water supply and local landfills compared to the project due to the proposed agricultural uses.

Wildfires

Under the General Plan/Specific Plan and Zoning Build-Out Alternative, as the project site is zoned as Exclusive Agriculture (A), Limited Agriculture (A-1), and Limited Agriculture – Airport Approach Height Combining (A-1 H), and Limited Agriculture – Floodplain Secondary Combining (A-1 FPS). This alternative would develop the project site into agricultural uses. Solar panels and an energy storage system would not be installed and solar energy would not be generated on the site.

Impacts related to wildfires for the proposed agricultural uses may introduce additional sources of vegetation, which may serve as fuel and exacerbate wildfire risks. Additionally, the use of the project site for agriculture would result in an increase of employees on the project site, which would further increase potential impacts from wildfire risks.

As with the project, this alternative is not classified as being within a high fire hazard severity zone and is not anticipated to physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site. The site is located in a rural, sparsely developed areas with limited population. The project site is not located along an identified emergency evacuation route and is not identified in any adopted emergency evacuation plan. Therefore, the General Plan/Specific Plan and Zoning Build-Out Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The project site has low topographic relief and is relatively flat. A majority of the project site is located within a Local Responsibility Area (LRA) Moderate zone, with a small section of the gen-tie study area in a State Responsibility Area (SRA) Moderate zone, which are considered wildland areas with low fire frequency and relatively modest fire behavior. However, the General Plan/Specific Plan and Zoning Build-Out Alternative includes the development of agricultural uses, which would not increase the potential for wildfires from occurring on the project site. Therefore, this alternative would not implement Mitigation Measure MM 4.14-1. As such, impacts under this alternative related to exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would be less than significant.

With regard to the installation or maintenance of associated infrastructure, unlike the project, agricultural uses would not require any installation of associated infrastructure. As such, this alternative would reduce fire risk that may result in temporary or ongoing impacts to the environment.

Similar to the project, development of the agricultural uses on the General Plan/Specific Plan and Zoning Build-Out Alternative could alter the existing drainage patterns and flowpaths compared to existing conditions. This alternative, similar to the project, would require implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include erosion and sediment control BMPs during construction, thereby reducing the potential of erosion and siltation during construction and would control potential flooding events that could occur during construction. During operation of this alternative, agricultural uses would be developed and little to no impervious surfaces would be on the project site; as such, the General

Plan/Specific Plan and Zoning Build-Out Alternative would not require implementation of Mitigation Measure MM 4.10-1. As such, similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Based on the above, impacts would be less than significant under this alternative as it relates to wildfire impacts. However, given the location of the project site in a rural area and with limited infrastructure, the project and related projects have the potential to result in significant and unavoidable cumulative impacts related to wildfire. Impacts under the General Plan/Specific Plan and Zoning Build-Out Alternative would be similar as compared to the project.

Comparison of Impacts

The General Plan and Zoning Build-Out Alternative would result in less impact to aesthetics, hazards and hazardous materials, and land use and planning. The alternative would result in similar impacts to agriculture and forestry resources, mineral resources, tribal cultural resources, and wildfires. This alternative would result in greater impacts in all remaining environmental issue areas. Greater impacts to air quality would result from emissions from the proposed agricultural uses onsite, such as agricultural vehicles and livestock emissions. As mitigation measures would not be implemented to avoid impacts on candidate, sensitive, or a special-status species, impacts to biological resources would be greater. Given the ground disturbance required and no implementation of mitigation, greater impacts would occur to potentially undiscovered cultural resources. This alternative would result in greater energy impacts as the project site would not generate renewable energy as compared to the project, and would therefore, not assist the state in meeting its renewable energy generation goals. Greater impacts to geology and soils related to paleontological resources would result from greater initial soil disturbance during construction and no implementation of mitigation. This alternative would result in greater GHG emission impacts than the project because the potential offset or displacement of GHG emissions from operation of the solar power generating facility, compared with traditional gas- or coal-fired power plants, would not be realized. Greater impacts to hydrology and water quality would result from continued ground disturbance from activities such as grazing and plowing and the application of herbicides or pesticides from the proposed agricultural uses. Greater impacts to noise would occur under this alternative during construction as no mitigation would be implement during construction and during operation through the noise associated with the daily operation of agricultural equipment and worker vehicles. The increase in human population onsite during operation no is also responsible for greater impacts to public services, transportation, and utilities and service systems. This alternative would eliminate aesthetics impacts. However, this alternative would not eliminate significant and unavoidable impacts associated with air quality (project and cumulative), biological resources (cumulative only), noise (project only), and wildfire (cumulative only). This alternative would also create additional significant and unavoidable impacts related to biological resources (project); cultural resources (project) and geology and soils (project).

Relationship to Project Objectives

The General Plan and Zoning Build-Out Alternative would not achieve any of the project objectives listed above in Section 6.2, including the project objective related to assisting California in meeting its greenhouse gas emissions reduction goals by 2020 and 2030 as required by the California Global Warming Solutions Act (Assembly Bill [AB] 32), as amended by Senate Bill 32 in 2016.

6.7.3 Alternative 3: Reduced Acreage Alternative

Environmental Impact Analysis

Aesthetics

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres.

With regard to impacts related to scenic vistas, there are no local areas that are designated as scenic vistas within the vicinity of the project site. However, Pacific Crest Trail (PCT), an important regional recreational facility and long-distance hiking and equestrian trail, is located approximately 3.16 miles north of the gen-tie line corridor, approximately 8.5 miles northwest of the northern site, and approximately 14.6 miles northwest of the southern site in the foothills of the Tehachapi Mountains. In addition, the areas surrounding the project site have been heavily modified. While implementation of the Reduced Acreage Alternative would add new manmade elements to views from the PCT, due to the distance of the project site from the PCT trail, these changes would not substantially change the quality of the view. As such, impacts would be less than significant.

While there are no officially designated state scenic highways in the County, two eligible state scenic highways (SR-58 and SR-14) are located within 2 miles of the site. Views to the northern site are available to from SR-58, but generally, the project site would not be clearly visible from SR-14. With regard to SR-58, solar panels and fencing would not substantially obstruct or interrupt available views to mountainous terrain or other scenic features. In addition to panels and fencing, the on-site collector substation, energy storage facility, and gen-tie line would be located on the northern site and would be potentially visible from SR-58. The on-site collector substation (components up to 55 feet high), the energy storage facility building (approximately 30 feet high), and gen-tie poles (concrete poles up to 185 feet high and spaced every 600 feet) would be located at a lower elevation than SR-58 motorists and setback approximately 0.5 miles or greater from the state route. The lower lying location of these components and the provided setbacks would reduce the visual prominence of the substation, energy storage facility, and gen-tie poles in available views to motorists. As such, impacts would be less than significant under the Reduced Acreage Alternative.

While this alternative would avoid development of a portion of the project site (i.e., the southern site), this alternative does include the installation of solar panels, energy storage system, and other O&M facilities. Similar to the project, the Reduced Acreage Alternative would similarly implement Mitigation Measures MM 4.1-1 through MM 4.1-4, which would be incorporated to reduce visual impacts that would occur from the collection of debris along the site boundary and to reduce views of the project by strategically installing view-screening materials in fencing. In addition, the color treatment of buildings on the northern site would help these components to better blend in with the natural landscape. However, similar to the project, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped desert landscape character of the project site, impacts to visual resources would remain significant and unavoidable.

As the Reduced Acreage Alternative includes the development of solar plans, as with the project, the potential for the solar panels to result in light and glare impacts would be similar to the project during construction and operation of the Reduced Acreage Alternative. As such, this alternative would implement Mitigation Measures MM 4.1-5 through MM 4.1-7. Impacts related to light and glare under the Reduced

Acreage Alternative site would be less than significant. However, cumulatively, while cumulative projects in the region would also be required to implement various mitigation measures to reduce lighting impacts, given the number of proposed cumulative projects directly adjacent to and within proximity of this alternative and the conversion of thousands of acres of land in a presently rural area, even with implementation of mitigation, the Reduced Acreage Alternative and cumulative projects combined would result in significant and unavoidable cumulative impacts related to light and glare.

The Reduced Acreage Alternative would have less overall impacts to aesthetics compared to the project due to the reduction in project site size under this alternative; however, impacts would remain significant and unavoidable.

Agriculture and Forestry Resources

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres.

The project and the Reduced Acreage Alternative would be developed with a solar panels facility and associated infrastructure and, thus, would create changes in the existing environment and would convert land zoned for agriculture to non-agricultural use. Similar to the project, this alternative would not directly or indirectly impact farmland, as there is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project area. In addition, according to available data, none of the parcels included as part of the project or any property in the vicinity of the project are subject to a Williamson Act Land Use contract or would result in the cancellation of an open space contract.

Impacts to agriculture and forestry resources would still be less than significant. As the Reduced Acreage Alternative would include a smaller footprint, the Reduced Acreage Alternative would result in less impact to agriculture and forestry resources compared to the proposed project.

Air Quality

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres, thereby reducing the extent of construction-related impacts to air quality. The use of construction vehicles, heavy equipment operation, and worker carpool trips would be similar compared to the project, but grading and other construction activities would not occur on the southern site. Similar to the project, this alternative would require implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 in order to reduce the severity of construction-related emissions. However, similar to the project, impacts would remain significant and unavoidable for project-level and cumulative construction impacts as the daily emissions under this alternative and the proposed project during construction would be the same. Operational emissions would likely be reduced under this alternative as fewer maintenance trips would be required with the reduced project scale. As such, operational impacts would be less than significant.

As it relates to impacts on implementation of the applicable air quality plan, since project-level and cumulative construction impacts would be significant and unavoidable, the Reduced Acreage Alternative would result in construction emissions of a magnitude that would obstruct the air quality planning goals set forth by EKAPCD. Therefore, similar to the project, impacts would be significant and unavoidable.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations. In particular, during construction of this alternative, it is possible that onsite workers could be exposed to

Valley Fever as fugitive dust is generated during construction. However, dust-minimizing techniques, as implemented through Mitigation Measure MM 4.3-3, would reduce these impacts to less than significant. As with the project, the Reduced Acreage Alternative would result in less-than-significant impacts related to toxic air contaminants, localized pollutant concentrations, asbestos, carbon monoxide (CO) Hotspots, and Valley Fever.

Overall, even with implementation of similar mitigation proposed for the project, impacts to air quality under this alternative would likely remain significant and unavoidable, despite resulting in a reduction in emissions due to reduced grading footprint under this alternative, as equipment and haul truck trips on a daily basis would be similar under both the project and this alternative. The Reduced Acreage Alternative would result in less overall impacts related to air quality than the project; however, temporary construction impacts would remain significant and unavoidable.

Biological Resources

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres.

As it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS, as with the project, the Reduced Acreage Alternative would have an impact to alkali mariposa lily, desert tortoise, burrowing owl, Swainson's hawk, loggerhead shrike, LeConte's thrasher, nesting birds, desert kit fox, recurved larkspur, Barstow woolly sunflower, pale-yellow layia, sagebrush Loefflingia, Latimer's woodland-gilia, Joshua trees, Wiggins' cholla, beavertail pricklypear, American badger, and raven. With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-12, impacts would be reduced to less than significant. However, as this alternative would avoid disturbing 965 acres of land within the southern portion of the project site, the Reduced Acreage Alternative would directly reduce the impact to biological resources.

With regard to impacts on any riparian habitat or other sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS, construction activities could result in significant impacts related to approximately 2.2 acres of CDFW- and RWQCB-jurisdictional areas are present on the northern site. As this alternative would not develop the southern site, approximately 2.9 acres of CDFW- and RWQCB-jurisdictional areas would not be directly impacted. However, as with the project, implementation of Mitigation Measures MM 4.4-13 through MM 4.4-14 would reduce impacts to less than significant under the Reduced Acreage Alternative.

Implementation of the above referenced mitigation measures would also reduce potential impacts to state or federally protected wetlands, the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, and consistency with local policies and ordinances protecting biological resources. The Reduced Acreage Alternative, as with the project, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

Based on the above, project-level impacts under the Reduced Acreage Alternative would be less than significant with implementation of mitigation and similar to those of the project. However, cumulatively, this alternative would still result in significant and unavoidable impacts to biological resources; regardless of the type of development, biological resources are being impacted throughout the Antelope Valley. However, as this alternative would avoid disturbing 965 acres of land within the southern site, the Reduced Acreage Alternative would result in less impact related to on specific identified as candidate, sensitive or

special-status species as well as impacts related to any riparian habitat or other sensitive natural community when compared to the project. All other impacts related to biological resources would remain the same compared to the project.

Cultural Resources

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres.

While no historical or archaeological resources were identified, ground-disturbing activities associated with the project have the potential to encounter undocumented archaeological resources that could qualify as historical resources. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.5-1 and MM 4.5-4. In addition, there is no indication that any particular location within the project site has been used for purposes of human burial in the recent or distant past. However, in the unlikely event that human remains are inadvertently discovered during project construction activities, implementation of Mitigation Measure MM 4.5-5 would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, implementing mitigation similar to the mitigation proposed for the project, impacts to cultural resources under this alternative would be less than significant. However, the Reduced Acreage Alternative would result in less impacts related to cultural resources compared to the project due to the reduction in ground disturbance required under this alternative.

Energy

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres. Eliminating 965 acres from project development would result in reduced energy use, as the Reduced Acreage Alternative would generate approximately 155 MW, a reduction from 300 MW as generated under the project with up to 3 GWh of energy storage, due to the proportional reduction in project size. Therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced as compared with the project. Similar to the project, the General Plan/Specific Plan and Zoning Build-Out Alternative would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. In addition, the Reduced Acreage Alternative would also similarly implement Mitigation Measure MM 4.3-1, as with the project, that would require implementation of energy control measures during construction. Furthermore, the fuel efficiency of the vehicles being used by the employees and visitors under this alternative is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. As such, the wasteful, inefficient, or unnecessary consumption of energy resources would be reduced in comparison with the project. Similar to the project, this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be less than significant. The Reduced Acreage Alternative would result in less energy impacts compared to the project.

Geology and Soils

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres.

Construction of the Reduced Acreage Alternative would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2016 Edition (CCR Title 24). Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with this alternative. In addition, similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.7-1, which requires that a geotechnical study to evaluate soil conditions and geologic hazards be performed by a qualified geotechnical engineer on the project site as well as implementation of Mitigation Measures MM 4.7-2, which would require that all structure proposed under this alternative, including the O&M facility, energy storage facility and associated infrastructure, and onsite substation adhere to the specifications, procedures, and site conditions contained in the final design plans. Implementation of these mitigation measures, as with the project, would serve to reduce impacts related to strong seismic ground shaking, unstable geologic unit, and expansive soils. In addition, with regard to soil erosion and loss of topsoil, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.7-3 and MM 4.7-4. Additionally, no septic tanks are proposed under this alternative. As it relates to unique paleontological resource or site or unique geologic feature, similar to the project, under the Reduced Acreage Alternative any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. As such, the General Plan/Specific Plan and Zoning Build-Out Alternative would implement Mitigation Measures MM 4.7-5 through MM 4.7-7 to reduce impacts to paleontological resources. Therefore, impacts would be less than significant.

As discussed above, with implementation of mitigation similar to that required for the proposed project, impacts to geology and soils would likely be less than significant. However, impacts to geology and soils would result in less impact to geology and soils compared to the proposed project due to the reduction in ground disturbance required under this alternative.

Greenhouse Gas Emissions

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres. Given a smaller project footprint than the project, the construction and operational impacts from the Reduced Alternative would remain less than the project. Therefore, the Reduced Acreage Alternative would result in fewer GHG emissions during construction and operations when compared with the project. Eliminating 965 acres from project development would result in reduced energy use, as the Reduced Acreage Alternative would generate approximately 155 MW with up to 3 GWh of energy storage, a reduction from 300 MW as generated under the project, due to the proportional reduction in project size. As such, impacts related to GHG emissions would be greater under this alternative due to the lower output of energy produced under this alternative.

Hazards and Hazardous Materials

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres.

Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2, and MM 4.17-1 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation, including the use of pesticides and herbicides; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Implementation of these mitigation measures would reduce impacts related to a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and

accident conditions involving the release of hazardous materials into the environment. With regard to hazardous emissions within 0.25 miles of a school, the nearest school to the project site is located approximately 3 miles north-northwest of the northern boundary of the project site, and therefore, this alternative would result in no impact related to hazardous emissions within 0.25 miles of a school.

Similar to the project, as the Reduced Acreage Alternative would be located within the Airport Influence Area for the Mojave Air and Space Port Airport, this alternative would be required to comply with the County's ALUCP and applicable FAA regulations regarding project approval to ensure that there is no conflict with airport operations and no safety hazards are presented as stated in Mitigation Measure MM 4.9-3. In addition, the Edwards Air Force Base would have to be notified of construction of this alternative to ensure no conflict with their operations. With adherence to project notification requirements the impacts related to the Airport Land Use Compatibility Plan would be less than significant.

As it relates to wildland fires, the project site is not within an area of high or very high fire hazard. However, similar to the project, the Reduced Acreage Alternative would include an energy storage component which, while they generally burn with difficulty, can in fact burn or become damaged by fire and generate fumes and gases that are extremely corrosive. Mitigation Measure MM 4.14-1 would be implemented which includes the development and implementation of a fire safety plan for construction and operation of the project in the event of a fire on the project site.

Impacts under the Reduced Acreage Alternative and the project would result in less-than-significant impacts after implementation of mitigation measures and the potential impacts from hazards and hazardous materials under the Reduced Acreage Alternative would be similar compared to the proposed project.

Hydrology and Water Quality

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres.

Similar to the project, the Reduced Acreage Alternative would include completion of a National Pollutant Discharge Elimination System (NPDES) completion form, and would implement Mitigation Measure MM 4.7-3, which would include BMPs to prevent the occurrence of soil erosion and discharge. This alternative would also implement Mitigation Measure MM 4.9-1, which would require the provision of a Hazardous Materials Business Plan. Furthermore, as hazardous materials can mix with stormwater and degrade water quality, this alternative, as with the project, would implement Mitigation Measure MM 4.10-1, which requires preparation of a drainage plan. Implementation of these mitigation measures would serve to reduce impacts related to violating water quality standards or waste discharge requirements; substantially altering drainage patterns; and creating or contributing runoff water that would exceed the capacity of existing for planned storm water drainage systems.

As it relates to groundwater supplies, water requirements under the Reduced Acreage Alternative, overall construction and operation related water requirements would be reduced under this alternative as compared to the proposed project as less grading would be involved during construction, and operation would have fewer solar panels. Similar to the project, water demands would be met by developing onsite groundwater and would draw from the FVWG or importing water from the MPUD. As described in Section 4.10, *Hydrology and Water Quality*, the amount of water stored in the FVGB is relatively large compared to the proposed demand associated with the project and according to the water supply assessment for the Project, the commitment from MPUD to supply the project with water from Well 30, and data supporting the ability of the underlying aquifer to support development of an onsite groundwater well without adverse effects,

there is sufficient water available for the proposed project through 2040. As water demand under this alternative would be less than that of the project, it is assumed that water demand under the Reduced Acreage Alternative would also be sufficiently supplied by either the water stored in the FVGB or imported from the MPUD. Therefore, this alternative would not substantially deplete ground water supplies or interfere substantially with groundwater recharge. Furthermore, this alternative would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan as the Reduced Acreage Alternative would require BMPs and drainage control requirements that would be consistent with the Basin Plan.

The project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards and impacts would be less than significant.

Overall, impacts related to hydrology and water quality would be less than significant with implementation of mitigation measures similar to those implemented under the proposed project. However, the Reduced Acreage Alternative would have less impact related to hydrology and water quality compared to the proposed project due to the reduced footprint, which would result in reduced grading activities and would reduce the amount of impervious surfaces when compared to the proposed project.

Land Use and Planning

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres. Nevertheless, development of the Reduced Acreage Alternative would still require zone changes and CUPs to operate a solar facility and energy storage facility on the project site, as well as an amendment to the Mojave Specific Plan Circulation Element. Impacts would be less than significant under this alternative. Land use and planning impacts would be similar under the Reduced Acreage Alternative when compared to the proposed project.

Mineral Resources

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres. There are no identified mineral resources on the project site and this alternative would result in less-than-significant impacts to mineral resources; therefore, the Reduced Acreage Alternative would result in similar impacts to mineral resources compared to the proposed project.

Noise

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres. Under the Reduced Acreage Alternative all overall construction and operational methods, workforce, and timing would be reduced when compared with the proposed project.

Under this alternative, as the number of onsite construction equipment is assumed to be similar under this alternative on a daily basis, as with the project, construction and decommissioning activities could generate noise greater than the standard 65 dB(a) for the Kern County General Plan and 55 dB(A) for short periods of time. The Reduced Acreage Alternative would implement similar mitigation measures as the project. However, even with implementation of mitigation measures, construction impacts would be significant and

unavoidable under the Reduced Acreage Alternative. As with the proposed project, operational activities under the Reduced Acreage Alternative would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards. Impacts would be less than significant. In addition, the closest offsite occupied residential structures would be located over 200 feet from construction activities. Note that while the property boundaries of sensitive receptors are located 58 feet from the project site boundary, the nearest physical structure is 200 feet from the project site boundary. As such, the vibration levels at the nearest residences would not reach the vibration level threshold for older residential structures. Operation of the Reduced Acreage Alternative would involve mostly regular maintenance trucks accessing the project site and panel washing activities, similar to the project, that would be a sufficient distance from structures (i.e., over 100 feet away from structures). As such, vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers.

This alternative is expected to result in significant and unavoidable noise impacts during construction and decommissioning activities and impacts related to noise would be similar to those of the proposed project. This alternative is expected to result in less than significant with mitigation noise impacts during operational activities and impacts related to noise would be less than those of the proposed project given the reduced footprint and similar time period of temporary noise impacts.

Public Services

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres.

Similar to the project, construction of the Reduced Acreage Alternative would result in a number of construction workers on the project site and increased fire service demands would occur during construction of this alternative. However, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-1, which would require the implementation of a fire safety plan. During operation, the project site would not require any additional employees to be onsite on a permanent basis. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-2, which would require the project operator to pay Kern County development impact fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation of this alternative. Implementation of Mitigation Measure MM 4.14-1 would also reduce fire risks onsite during operation of this alternative. Impacts related to fire protection would be less than significant with mitigation.

With regard to police protection, while the project site is located in an area that is unlikely to attract attention, construction activities would increase traffic volumes along SR-58 and SR-14, similar to the project. The increase in traffic would be temporary and thus would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. In addition, fences would be installed around the perimeter of the northern site, substation, and other areas requiring controlled access, for safety and security purposes. During operation of this alternative, the additional volume of vehicles associated with workers commuting to the project site during routine maintenance would be minor and is not expected to adversely affect traffic. Therefore, the increase is not likely to have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

Based on the above, impacts would be less than significant under this alternative following implementation of similar mitigation measures proposed for the project and impacts related to public services would be similar compared to the project.

Transportation

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres. Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be reduced when compared with the project.

Similar to the project, during construction of the Reduced Acreage Alternative, which would require similar construction trips for installation of the solar panels, all study roadway segments are forecasted to operate at Caltrans- or County-defined acceptable LOS D conditions or better. During operation of this alternative, day to day operations and maintenance trips would be reduced in comparison with those of the project. Similar to the project, the total number of daily trips for maintenance of the solar panels are estimated to be less than the number of trips generated during construction. As construction impacts would be less than significant, operation of this alternative would also have a less-than-significant impact on area roadways.

With regard to consistency with CEQA *Guidelines* Section 15064.3(b), while Kern County is currently engaged in implementing provisions of this section, they have not yet been formally adopted the updated transportation significance thresholds or its updated transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a traffic impact. Therefore, impacts related to CEQA *Guidelines* Section 15064.3(b) would be less than significant under the Reduced Acreage Alternative, as with the project.

As it relates to increasing hazards due to a geometric design feature or incompatible use, similar to the project, the Reduced Acreage Alternative would also require the use of oversized vehicles during construction which could create a hazard to the public by limiting motorist views and by the obstruction of space. As with the project, this alternative would also implement Mitigation Measure MM 4.15-1, which would reduce impacts from oversized construction vehicles and would also provide further assurances for emergency access.

Based on the above, impacts would be less than significant. Given the reduction in operational trips under this alternative's as compared to the operational trips required under the project, the Reduced Acreage Alternative impacts related to transportation would be less compared to the proposed project.

Tribal Cultural Resources

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres. No tribal cultural resources were identified within or immediately adjacent to the project site. There would be no impact. Therefore, impacts to tribal cultural resources would be similar when compared to the project.

Utilities and Service Systems

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres. Eliminating 965 acres from project development

would result in reduced demand for utilities and service systems, as the Reduced Acreage Alternative would generate approximately 155 MW with 3 GWh of energy storage, a reduction from 300 MW as generated under the project, and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced in comparison with the proposed project.

As with the project, installation of solar panels would require water usage for dust suppression as well as minimal generation of wastewater, usage of electrical power, natural gas, and telecommunications. In addition, construction of the Reduced Acreage Alternative would not substantially alter stormwater drainage. With regard to operation, the solar panels installed under the Reduced Acreage Alternative would require a reduced water demand in comparison with the project. Wastewater and solid waste generation associated with this alternative would also be reduced compared to the proposed project due to the reduced number of employees required for maintenance of the solar panels. As the Reduced Acreage Alternative would develop the project site, impervious surfaces would be minimized as much as possible, as with the project. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.10-1, which requires preparation of a drainage plan to reduce potential increases in stormwater runoff onsite and would detail any necessary physical structures required to control stormwater.

This alternative is expected to result in less-than-significant impacts to utilities and service systems and impacts would be less compared to the proposed project due to the reduced number of employees required for maintenance of the solar panels.

Wildfires

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres.

As with the proposed project, this alternative is not classified as being within a high fire hazard severity zone and is not anticipated to physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site. The site is located in a rural, sparsely developed areas with limited population. The project site is not located along an identified emergency evacuation route and is not identified in any adopted emergency evacuation plan. Therefore, the Reduced Acreage Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The project site has low topographic relief and is relatively flat. A majority of the project site is located within an LRA Moderate zone, with a small section of the gen-tie study area in a SRA Moderate zone, which are considered wildland areas with low fire frequency and relatively modest fire behavior. Similar to the project, the energy storage facility developed under this alternative has the potential to burn and, should this occur, has the potential to expose workers and environment to pollutants and fire. As such, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-1, which would require the development and implementation of a Fire Safety Plan for use during construction, operation, and decommissioning of the project, which would further reduce the fire risks onsite. As such, impacts under this alternative related to exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would be less than significant.

With regard to the installation or maintenance of associated infrastructure, solar panels would require installation of the electrical collector line, similar to the project. The installation of the electrical collector line would not be placed within a high fire hazard zone and the vegetation would be cleared and thus would not result in increased fire risks that could result in temporary or ongoing impacts to the environment.

Similar to the project, the development proposed under the Reduced Acreage Alternative could alter the existing drainage patterns and flowpaths compared to existing conditions as well as increase impervious surfaces. As with the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.10-1, which requires preparation of a drainage plan. This mitigation measures would minimize potential increases in runoff and ensure that the retention basins and other stormwater management features are implemented to minimize erosion and sedimentation to less than significant. As such, similar to the project, the Reduced Acreage Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation proposed for the project, this alternative is expected to result in less-than-significant impacts to wildfires. However, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in significant and unavoidable cumulative impacts related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. The Reduced Acreage Alternative would likely result in less impact than the project due to the reduced footprint compared to the project.

Comparison of Impacts

The Reduced Acreage Alternative would be reduced in size compared to the project, and would generate approximately 155 MW with up to 3 GWh of energy storage, due to the proportional reduction in project size and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced in comparison with the project. Due to the reduced footprint, the Reduced Acreage Alternative would result in less or similar impacts for the majority of environmental issue areas. However, this alternative would result in greater impacts to GHG emissions given its reduced solar energy output. In addition, this alternative would not eliminate significant and unavoidable impacts associated with aesthetics (project and cumulative), air quality (project and cumulative), biological resources (cumulative only), noise (project only), and wildfire (cumulative only).

Relationship to Project Objectives

Under the Reduced Acreage Alternative, the project would not develop the southern site and would reduce the project's footprint from 2,006 acres to 1,041 acres. Although this alternative would achieve some of the project objectives, it would not achieve the goals of developing facilities to produce the necessary amount of clean electricity to help achieve California's renewable energy goals to the degree associated with the proposed project. This alternative would meet the objective of developing the facility in proximity to an available connection to the existing electrical distribution infrastructure and customer loads; minimizing environmental impacts by using existing electrical distribution facilities; minimizing impacts on threatened and/or endangered species; minimizing water use; reducing GHG emissions; and using technology that is available, proven, efficient, and easily maintained, recyclable, and environmentally sound. However, the Reduced Project Alternative would not achieve the project objectives of generating 300 MW of renewable electric energy. It is unknown if this alternative would achieve the project objective of producing and transmitting electricity at a competitive cost.

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

Environmental Impact Analysis

Aesthetics

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities.

With regard to impacts related to scenic vistas, there are no local areas that are designated as scenic vistas within the vicinity of the site. With the No Ground-Mounted Utility-Solar Development Alternative, solar installation would occur on the roofs of the existing buildings. In addition, while the PCT, an important regional recreational facility and long-distance hiking and equestrian trail, has views of the entire Antelope Valley, installation of solar panels on rooftops of commercial and industrial facilities dispersed throughout the Antelope Valley would not substantially change the quality of the view. Thus, given that no local area are designed as scenic vistas and development under this alternative would be dispersed throughout western Antelope Valley, the No Ground-Mounted Utility-Solar Development Alternative would not have a substantial adverse effect on a scenic vista.

The project would not be visible from any Officially Designated State or County Scenic Highway. Although both SR-58 east of Mojave and SR-14 north of Mojave are designated as eligible State Scenic Highways, they have not yet been Officially Designated. Given the fact that development under this alternative would be dispersed throughout western Antelope Valley, this alternative would not substantially damage scenic resources. Impacts would be less than significant under the No Ground-Mounted Utility-Solar Development Alternative and impacts would be less than those of the project.

The installation of small to medium solar PV systems on large commercial and industrial rooftops would be visually unobtrusive or unnoticeable from receptors at ground level. However, from other vantage points, the installation of rooftop small to medium solar PV systems may be visible, but would not likely affect the visual character or quality of an area, because the character or quality of an area has already been altered as a result of the existing building's construction. The exceptions may be if rooftop solar were proposed on historic buildings, which could affect the historic character and integrity of the buildings. Implementation of this alternative would require historic surveys and investigations to evaluate the eligibility of potentially historic structures that are over 50 years old, and either avoidance of such buildings, or incorporation of design measures to minimize impacts on historic integrity of historically significant structures.

With regard to light and glare, construction and operation of the No Ground-Mounted Utility-Solar Development Alternative would require implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, similar to the project. As development of the No Ground-Mounted Utility-Solar Development Alternative would be dispersed throughout the Antelope Valley and not concentrated within proximity to other solar and wind developments, this alternative would eliminate the significant and unavoidable cumulative impacts of the proposed project.

Based on the above, this alternative would avoid significant and unavoidable aesthetic impacts that would occur under the proposed project. With implementation of mitigation measures to address impacts related to historic buildings, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to aesthetics compared to the project.

Agriculture and Forestry Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities. Since the solar PV systems proposed for this alternative would be constructed on existing structures, this alternative would not create any changes in the existing environment that would convert land that is designated Farmland or forest land to non-agricultural or non-forest uses. As such, no impacts to agriculture or forestry resources would occur. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to agriculture and forestry resources compared to the proposed project, as this alternative would not require ground disturbance.

Air Quality

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities. Under this alternative, no construction activities associated with ground disturbance would occur. Thus, this alternative would eliminate the significant and unavoidable project-level and cumulative construction impacts related to regional air quality emissions and implementation of applicable air quality plans. Emissions would be limited to trucks transporting the solar panels and minor ground disturbance. Mitigation measures would be implemented as necessary to ensure that impacts are reduced as it relates to regional and localized construction emissions and valley fever exposure. Implementation of Mitigation Measure MM 4.3-3 would not be required. During operation, this alternative would have similar impacts on air quality as the project related to occasional vehicular visits for maintenance. As such, operational impacts would be less than significant. Overall, air quality impacts under the No Ground-Mounted Utility-Solar Development Alternative would be less than significant. Therefore, this alternative would result in less impacts related to air quality compared to the project as this alternative would result in a substantial reduction in construction activities.

Biological Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout the Antelope Valley. The project site would remain undeveloped and only developed areas, typically on the rooftops of commercial and industrial facilities, in the Antelope Valley would be modified. Given that rooftops of existing commercial and industrial facilities would be used for solar PV system installation, these areas would be unlikely to provide habitat for special-status species. Development of this alternative would not disturb any land or remove habitat for special-status plants and wildlife or have a substantial adverse effect on any riparian habitat. As such, Mitigation Measures MM 4.4-1 through MM 4.4-10 and MM 4.4-13 through MM 4.4-14 would not be required. Operation of the small to medium solar PV systems would continue to require implementation of Mitigation Measures MM 4.4-11 through MM 4.4-12. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would not contribute to a cumulative loss of desert tortoise, burrowing owl, raptors, desert kit

fox, and migratory birds. As such, significant and unavoidable cumulative impacts would be eliminated as well. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to biological resources compared to the project as this alternative would not require ground disturbance.

Cultural Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout the Antelope Valley. Given that development would occur on the rooftops of existing structures, there would be no potential for disturbance or damage to buried archaeological resources and human remains. If rooftop solar systems were proposed on historic buildings, this alternative could affect the historic character and integrity of these buildings, as well as the character and views of adjacent historical resources. However, historic surveys and investigations would be conducted prior to project construction to identify known eligible historical resources and to evaluate the eligibility of potentially historic structures that are 45-years or older; historic structures would be either avoided or the alternative would be required to incorporate mitigation and design measures to minimize the impact on these structures. In the case of eligible historical resources, design measures must be in accordance with the Secretary of the Interior standards and the impact must not affect the eligibility of such resources or adjacent resources. Therefore, unanticipated impacts to unknown or known cultural resources would not occur under this alternative. Impacts would be less than significant. With the appropriate mitigation measures in place to reduce impacts to historical resources, the potential to disturb or discover unknown cultural resources within the project area would be less than significant. However, given the inability to impact archaeological resources under this alternative, the No Ground-Mounted Utility-Solar Development Alternative would result in fewer impacts related to cultural resources compared to the proposed project as this alternative would not require ground disturbance.

Energy

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout the Antelope Valley. As such, construction would be limited to trucks transporting the solar panels and installation of the solar panels on the rooftops of existing buildings. Implementation of Mitigation Measure MM 4.3-1 would still be required during construction as it requires implementation of energy-efficient and alternatively-fueled equipment during construction. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would have a less-than-significant impact related to wasteful, inefficient, or unnecessary consumption of energy resources and this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As similar energy generation capabilities would be provided, impacts would be similar compared to the proposed project.

Geology and Soils

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout the Antelope Valley. Given that only developed areas would be modified, there would be no potential for the No Ground-Mounted Utility-Solar Development Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, and landslides; result in

substantial soil erosion or loss of topsoil; result in on- or offsite landslides, be located on expansive soil; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. The No Ground-Mounted Utility-Solar Development Alternative would not require implementation of Mitigation Measures MM 4.7-1 through MM 4.7-7. Development of rooftop solar would require adherence to all requirements of the Kern County Building Ordinance. Therefore, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to geology and soils compared to the proposed project as this alternative would not require ground disturbance.

Greenhouse Gas Emissions

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities. This alternative would not generate GHG emissions from heavy equipment required for ground disturbing activities, but distributed systems on rooftops would lack tracking systems and be less efficient. As such, this alternative's overall GHG emission offset potential would be smaller to the proposed project. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would have less-than-significant impacts related to generating GHG emissions that may have a significant impact on the environment or consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. However, impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology.

Hazards and Hazardous Materials

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley. The installation of rooftop solar equipment on existing structures would involve fewer hazardous materials (such as chemicals and fuels) than the project construction on the undeveloped project site. Similar to the project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2, and MM 4.17-1 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Mitigation Measure MM 4.9-2 would also regulate the use of herbicides. Implementation of these mitigation measures would reduce impacts related to the routine transport, use, or disposal of hazardous materials associated with the project site; and creating 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.

While it is unknown where the solar PV systems would be located within the Antelope Valley, the No Ground-Mounted Utility-Solar Development Alternative, similar to the project, would adhere to any applicable notification requirements related to the Airport Land Use Compatibility Plan.

As it relates to wildland fires, as the small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley, it is expected that these areas where the solar PV systems would be installed would be in more urbanized areas that would not require a battery storage component. However, due to the numerous power lines that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks. As

such, similar to the project, Mitigation Measure MM 4.14-1 would be implemented to reduce wildfire risks under this alternative.

Based on the above, impacts under this alternative would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to hazards and hazardous materials compared to the proposed project, as this alternative would require usage of fewer hazardous materials.

Hydrology and Water Quality

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley. No ground disturbance related to construction would be required under this alternative.

Compliance with the NPDES Construction General Permit, including development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), would not be required under the No Ground-Mounted Utility-Solar Development Alternative, thus eliminating implementation of Mitigation Measure MM 4.7-3. Similar to the proposed project, this alternative would require implementation of Mitigation Measure MM 4.9-1, which, as described above, would delineate hazardous material and hazardous waste storage areas; describe proper handling, storage, transport, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; and establish public and agency notification procedures for spills and other emergencies, including fires. Implementation of this mitigation measure would reduce potential impacts related to violating water quality standards or degradation of surface or groundwater quality during construction and operation of the No Ground-Mounted Utility-Solar Development Alternative. However, implementation of Mitigation Measure MM 4.10-1 would not be required as this alternative would not disturb soils such that drainage patterns would not be altered.

As it relates to groundwater supplies, water requirements under the No Ground-Mounted Utility-Solar Development Alternative, would be reduced as compared to the water requirements of the project as limited dust suppression or concrete mixing would be required during construction and operational panel washing is expected to be less frequent given the location of panels on top of buildings throughout the Antelope Valley (rather than directly on sediment). As such, this alternative would not substantially deplete groundwater levels in comparison to existing conditions. In addition, as solar panels would be installed on rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley, no change in pervious surfaces would occur. As such, impacts would be less than significant.

With regard to existing drainage patterns, as small to medium solar PV systems would be developed on the rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley, drainage patterns and flow paths would not be altered. As such, impacts related to drainage patterns would be less than significant.

The Antelope Valley is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards and impacts would be less than significant. In addition, water for construction and operation phases under the No Ground-Mounted Utility-Solar Development Alternative would either be drawn from the FVGB or be obtained from Well 30, which MPUD has committed to supply the project site with water from this well and data provided supports the ability of the underlying aquifer to support development of an onsite groundwater well without

adverse effects. Therefore, the project would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Overall, impacts related to hydrology and water quality would be less than significant. However, the No Ground-Mounted Utility-Solar Development Alternative would result in less overall impacts related to hydrology and water quality materials compared to the project as this alternative would not require ground disturbance, which could potentially introduce more pollutants to stormwater, and water requirements during construction and operation of the this alternative would be reduced as no dust suppression or concrete mixing would be required during construction and operational panel washing is expected to be less frequent.

Land Use and Planning

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley. Under this alternative, there would be no zone changes, Specific Plan Circulation Element Amendment, or CUPs required. Installation of rooftop solar would be consistent with current zoning as well as existing land use plans, policies, and regulations. The No Ground-Mounted Utility-Solar Development Alternative would also achieve the County's goals and policies relative to accommodating renewable energy facilities. However, the placement of solar panels on other structures throughout the region would result in unknown entitlement requirements, depending on the project location, zoning, land use, and potential environmental impacts on the site and surrounding areas. Nonetheless, to allow such development, the project proponent would be required to comply with the specific entitlements needed to construct solar PV systems consistent with this alternative. Impacts would be less than significant. Impacts to land use and planning under the No Ground-Mounted Utility-Solar Development Alternative would be greater than the proposed project.

Mineral Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout the Antelope Valley. Since this alternative would not disturb any ground surfaces, there would be no impact to mineral resources. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts to mineral resource compared to the proposed project as no ground disturbance would occur.

Noise

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities. Rooftops of existing commercial and industrial buildings that would be developed under this alternative would be in developed areas. As a result, noise related to construction activities would likely impact sensitive receptors. The operational noise generated from these solar PV systems would be similar to that of the project and would result in less-than-significant impacts. With regard to vibration, construction of the No Ground-Mounted Utility-Solar Development Alternative would not require the use of vibratory rollers or other construction equipment with high groundborne vibration levels. Therefore, it is likely that construction vibration would have a less than significant construction vibration impact. Similar to the project, operation of the No Ground-Mounted Utility-Solar Development Alternative would require regular maintenance trucks (0.076 in/sec PPV) and panel washing activities. Whether rooftop

solar systems are proposed on historic buildings, which are more susceptible to vibration damage, or other types of newer buildings, this level of vibration would not exceed vibration thresholds and, as such, would result in less-than-significant impacts.

As discussed above, construction and operational vibration impacts and operational noise impacts would be less than significant. However, the No Ground-Mounted Utility-Solar Development Alternative would result in similar significant and unavoidable impacts related to construction noise than the proposed project.

Public Services

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley and the project site would remain undeveloped. Unlike the project, the No Ground-Mounted Utility-Solar Development Alternative would not introduce structures into a currently undeveloped area and is not expected to temporarily or permanently increase the concentration of persons in an area.

With regard to fire protection, it is expected that the areas where the solar PV systems would be installed in more urbanized areas. However, due to the numerous power lines that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks. As such, similar to the project, Mitigation Measure MM 4.14-1 would be implemented to reduce wildfire risks under this alternative. In addition, similar to the project, in the event that a fire occurs during operation of the No Ground-Mounted Utility-Solar Development Alternative, this alternative would implement Mitigation Measure MM 4.14-2, which would require the project operator to pay Kern County development impact fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation of this alternative. Impacts related to fire protection would be less than significant with mitigation.

With regard to police protection, as the proposed small to medium solar PV systems would be installed in more urbanized areas on existing buildings, it is unlikely that construction and operation of the No Ground-Mounted Utility-Solar Development Alternative would attract attention. Similar to the project, this alternative would increase traffic with truck trips during construction and routine maintenance during operation of this alternative. However, the additional volume of trips during construction and operation would be minimal and would not likely have a significant and adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

Based on the above, impacts are expected to be less than significant with mitigation. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to public services compared to the project as the proposed small to medium solar PV systems would be developed in urbanized areas that already receive fire protection and police protection services.

Transportation

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley.

Similar to the project, this alternative would require vehicular trips during construction to transport and install the solar panels. However, the trips would be more dispersed than the project given the location of the existing facilities, thereby reducing impacts on the roadways surrounding the project site. As such, roadway segments

within the Antelope Valley are not expected to operate at levels that would trigger a significant transportation impact during construction of this alternative. During operation of this alternative, day to day operations and maintenance trips would be similar to those of those of the project. However, as with construction, these maintenance trips would be more dispersed than the project given the location of the existing facilities. It is also estimated that the total number of daily trips for maintenance of the solar panels are less than the number of trips generated during construction. As construction impacts would be less than significant, operation of this alternative would also have a less-than-significant impact on area roadways.

With regard to consistency with CEQA *Guidelines* Section 15064.3(b), while Kern County is currently engaged in implementing provisions of this section, they have not yet been formally adopted the updated transportation significance thresholds or its updated transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a traffic impact. Therefore, impacts related to CEQA *Guidelines* Section 15064.3(b) would be less than significant under the No Ground-Mounted Utility-Solar Development Alternative, as with the project.

Based on the above, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to transportation compared to the proposed project due to the dispersed nature of the construction and operational trips.

Tribal Cultural Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout the Antelope Valley. It is unlikely that the proposed rooftop solar systems would have an impact on tribal cultural resources. However, prior to construction of this alternative, the Native American Heritage Commission will be contacted for a search of the Sacred Land File for the No Ground-Mounted Utility-Solar Development Alternative construction area. In addition, the County will conduct additional consultation with California Native American tribes on the County's Master List for AB 52, apprising them of the alternative project description. Due to the nature of the No Ground-Mounted Utility-Solar Development Alternative, it is highly unlikely to have an impact on tribal cultural resources. It is anticipated that the Sacred Land File and consultation would not result in the identification of any tribal cultural resources that could be impacted by the No Ground-Mounted Utility-Solar Development Alternative directly or indirectly, however should it be determined the potential exists, this alternative will avoid impacting any such resources through avoidance and re-design. As such, The No Ground-Mounted Utility-Solar Development Alternative would have no impact to tribal cultural resources and no mitigation would be required. Furthermore, the No Ground-Mounted Utility-Solar Development Alternative would result in similar impacts related to tribal cultural resources compared to the proposed project.

Utilities and Service Systems

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley.

With regard to water demand, the No Ground-Mounted Utility-Solar Development Alternative would likely require minimal water as no dust suppression or concrete mixing would be required during construction. This alternative would also require minimal generation of wastewater and usage of electrical power, natural

gas, and telecommunications. In addition, construction of the No Ground-Mounted Utility-Solar Development Alternative would not substantially alter stormwater drainage. With regard to operation, solar panel washing is expected to be less frequent, as compared to the project, given the location of panels on top of buildings throughout the Antelope Valley (rather than directly on sediment). As the No Ground-Mounted Utility-Solar Development Alternative would not develop the project site, this alternative would not result in impervious surfaces and implementation of Mitigation Measure MM 4.7-3, which requires implementation of a SWPPP, and Mitigation Measure MM 4.10-1, which would require preparation of a drainage plan to reduce potential increases in stormwater runoff onsite, would not be required. Wastewater and solid waste generation associated with this alternative would be similar to the project due to the similar number of employees required for maintenance of the solar panels. This alternative would implement Mitigation Measure MM 4.17-1, which would reduce impacts related to solid waste.

Based on the above, impacts to utilities and service systems would be less than significant. This alternative would result in less overall impacts related to utilities and service systems than the proposed project due to the reduction in construction activities.

Wildfires

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the Antelope Valley. Due to the numerous power lines that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks above that of the project. As such, similar to the project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measure MM 4.14-1, which would require the development and implementation of a Fire Safety Plan for use during construction, operation, and decommissioning of the project, which would further reduce the fire risks. With regard to the installation or maintenance of associated infrastructure, solar panels would require installation of the electrical collector line, similar to the proposed project. The installation of the electrical collector line would not be placed within a high fire hazard zone and thus would not result in increased fire risks that could result in temporary or ongoing impacts to the environment. Development of the No Ground-Mounted Utility-Solar Development Alternative would not require grading and excavation to reduce the overall slope of the project site. As such, the No Ground-Mounted Utility-Solar Development Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation, this alternative is expected to result in less-than-significant impacts to wildfires. The No Ground-Mounted Utility-Solar Development Alternative would likely result in slightly less impact than the proposed project as solar panels would be located in more urbanized areas.

With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the No Ground-Mounted Utility-Solar Development Alternative and related projects have the potential to result in significant and unavoidable cumulative impacts related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. The No Ground-Mounted Utility-Solar Development Alternative would likely result in slightly less impact than the project as solar panels would be located in more urbanized areas.

Comparison of Impacts

The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to aesthetics, agriculture and forestry resources, air quality, cultural resources, biological resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, transportation, and utilities and service systems. Further, this alternative would avoid the significant and unavoidable impacts to aesthetics (project and cumulative), air quality (project and cumulative), biological resources (cumulative only), and noise (project and cumulative) that would occur under the project.

Relationship to Project Objectives

This alternative would partially satisfy the project objective of assisting California in meeting its greenhouse gas emissions reduction goals by 2020 and 2030 as required by the California Global Warming Solutions Act (AB 32), as amended by Senate Bill 32 in 2016. However, up to 3 GWh of energy storage (a component of the proposed project) would not be constructed under this alternative. This alternative would not achieve other project objectives including developing on a previously disturbed site that is close to transmission infrastructure in order to minimize environmental impacts and maximizing the use of existing transmission infrastructure. Additionally, there are some drawbacks to this alternative that include, but not limited to those listed below.

- Up to 3 GWh of energy storage would not be included.
- The system would not likely be built out within a timeframe that would be similar to that of the project.
- Given the distributed nature of such a network of facilities, construction, management, and maintenance would not be as efficient, and total capital costs would likely be higher.
- The project proponent does not have immediate control or access to potential urban sites that could accommodate facilities to generate 300 MW of solar power.
- A distributed system of the scale of the project would be cost-prohibitive.

This alternative theoretically has the potential to generate of up to 300 MW of electricity but it would be used on the sites generating the power, and would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Additionally, this alternative does not include up to 3 GWh of energy storage. Given the size of the project, the project objectives, and the need to arrange a suitable assemblage of participating commercial and industrial properties, it is impractical and infeasible to propose a distributed generation project of this type and still proceed within a reasonably similar timeframe.

6.8 Environmentally Superior Alternative

As presented in the comparative analysis above, and as shown in Table 6-2, there are a number of factors in selecting the environmentally superior alternative. An EIR must identify the environmentally superior alternative to the project. Alternative 1, the No Project Alternative, would be environmentally superior to

the project on the basis of its minimization or avoidance of physical environmental impacts. However, CEQA *Guidelines* Section 15126.6(e)(2) states:

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

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Environmentally Superior Alternative is considered to be the No Ground-Mounted Utility-Solar Development Alternative. This alternative would avoid significant and unavoidable impacts to aesthetics, air quality, biological resources, and noise. Impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology or up to 3GWh of energy storage. This alternative could potentially result in greater impacts to land use and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, this alternative would result in less impact to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, public services, transportation, and utilities and service systems. Thus, for most environmental issue areas, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the project.

It is important to note that it is considered to be impracticable and infeasible to construct the No Ground-Mounted Utility-Solar Development Alternative within the same timeframe and/or with the same efficiency as the project because the project proponent lacks control and access to the sites required to develop 300 MW of distributed solar generated electricity and the required land to support up to 3GWh of energy storage. In addition, this alternative would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California’s RPS Program. Nonetheless, because this alternative reduces impacts to a greater degree than the General Plan and Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

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Chapter 7

Response to Comments

This chapter is being reserved for, and will be included with, the Final EIR.

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Chapter 8

Organizations and Persons Consulted

8.1 Federal

Edwards Air Force Base	U.S. Bureau of Land Management
China Lake Naval Weapons Center	U.S. Department of Agriculture,
Federal Aviation Administration	Natural Resource Conservation Service
Federal Communications Commission	U.S. Environmental Protection Agency Region IX
U.S. Air Force	U.S. Fish and Wildlife Service
U.S. Army	U.S. Marine Corps
U.S. Army Corp of Engineers	U.S. Navy

8.2 State of California

California Air Resources Board	California Native American Heritage Commission
California Department of Conservation	California Office of Historic Preservation
California Department of Fish & Wildlife, Fresno Region	California Public Utilities Commission
California Department of Forestry and Fire Protection (CAL FIRE)	California Regional Water Quality Control Board, Lahontan Region
California Department of Parks and Recreation	California State Clearinghouse
California Department of Toxic Substances Control	Caltrans Division of Aeronautics
California Energy Commission	Caltrans District 6
California Highway Patrol	Caltrans District 9

8.3 Regional and Local

AES Midwest Wind Generation	Fotowatio Renewable Ventures	Mojave Unified School District
Antelope Valley-East Kern Water Agency	Iberdrola Renewables	Native American Heritage Council of Kern County
AT&T	Inyo County Planning Department	Northcutt and Associates
Bakersfield City Planning Department	Kelly Group	Pacific Gas & Electric
Bakersfield City Public Works Department	Kern County Agriculture Department	Planning and Building
California City Planning Department	Kern County Airports Department	Recurrent Energy
		Renewal Resources Group Holding Company

Center on Race, Poverty, & the Environment	Kern County Council of Governments	Robert Burgett
City of Arvin	Kern County Environmental Health Services Department	Rosamond Municipal Advisory Council
City of Maricopa	Kern County Fire Department	San Bernardino County Planning Department
City of McFarland	Kern County Library	San Luis Obispo County Planning Department
City of Ridgecrest	Kern County Parks and Recreation	Santa Barbara County Resource Management Department
City of Shafter	Kern County Public Works Department	Sierra Club
City of Taft	Kern County Superintendent of Schools	Southern California Edison
City of Tehachapi	Kern County Water Agency	Southern California Gas Company
City of Wasco	Kern Valley Indian Council	Southern San Joaquin Valley Information Center
Congentrix Sunshine, LLC	Kings County Planning Agency	Structure Cast
David Laughing Horse Robinson	LIUNA	Tehachapi Area Association of Realtors
David Walsh	Los Angeles Audobon	Terra-Gen Power, LLC
Defenders of Wildlife	Los Angeles County Regional Planning Department	The Gorman Law Firm
Delano City Planning Department	Lozeau Drury, LLP	Tulare County Planning & Development Department
Desert Tortoise Preserve Committee	Mojave Airport	Ventura County RMA Planning Division
East Kern Air Pollution Control District	Mojave Foundation	Vestas
East Kern Airport District	Mojave Public Utility District	Wind Stream, LLC
Eastern Kern Resource Conservation District	Mojave Town Council	
EDP Renewables Company		

8.4 Other

San Manuel Band of Mission Indians	Tejon Indian Tribe
Twenty-Nine Palms Band of Mission Indians	Torres Martinez Desert Cahuilla Indians

9.1 Lead Agency

Kern County Planning and Natural Resources Department

Lorelei H. Oviatt, AICP – Director

Craig M. Murphy – Assistant Director

Katrina A. Slayton – Advanced Planning Division Chief

Ronelle R. Candia – Supervising Planner

9.2 Technical Assistance

Environmental Science Associates (ESA)

Charles Smith – Project Director

Kimberly Comacho – Project Manager

Justin Hall – Deputy Project Manager and Technical Analyst

Jacqueline De La Rocha – Senior Air Quality Analyst

Jeff Goodson – Senior Noise Analyst

Greg Ainsworth – Senior Biological Resources Analyst

Jaclyn Catino-Davenport – Biological Resources Analyst

Michael Bever – Senior Archaeologist

Michael Vader – Cultural Analyst

Lisa Maier – Technical Analyst

Sylvia Palomera – Technical Analyst

Shadde Rosenblum – Senior Traffic Analyst

Eric Schniewind – Senior Geologist, Hydrologist, and Hazardous Materials Analyst

Stephan Geissler – GIS Analyst

Jaclyn Anderson – GIS Analyst

Denise Kaneshiro – Graphics

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