# Draft
# Environmental Impact Report/Environmental Assessment

**SCH# 2018061031**

## Volume 1

**Chapters 1 through 11**

**Camino Solar Project**
**By Aurora Solar, LLC.**

**Conditional Use Permit No. 7, Map No. 216**

Kern County
Planning and Natural Resources Department
Bakersfield, California
PP 17125

February 2020

**Lorelei H. Oviatt, AICP, Director**
**2700 "M" Street, Suite 100**
**Bakersfield, CA 93301-2323**
**Phone: (661) 862-8600**
**Fax: (661) 862-8601** TTY Relay 1-800-735-2929
**Email: planning@co.kern.ca.us**
**Web Address: http://pcd.kerndsa.com/**

**PLANNING AND NATURAL RESOURCES DEPARTMENT**

**Planning**
**Community Development**
**Administrative Operations**

February 13, 2020

**File:** CUP 7, Map 216

ADDRESSEE LIST (See Distribution List)

Re: Draft Environmental Impact Report for the **EIR JKM 03-17; Camino Solar Project, by Aurora Solar, LLC (PP17125)**

Dear Interested Party:

Kern County has prepared a Draft Environmental Impact Report/Environmental Assessment (Draft EIR/EA) for the above-noted land use application 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 44 megawatts (MW) of renewable electrical energy and up to 44 MW of energy storage capacity on approximately 150 acres of privately-owned land and 233 acres of land owned by the Bureau of Land Management in unincorporated Kern County.

The proposed project site is located approximately 12 miles south of the City of Tehachapi and approximately 16 miles northwest of the unincorporated community of Rosamond. The proposed project sits on both private and publicly owned lands north of Rosamond Blvd at 170th Street West in the unincorporated area of Kern County. The proposed project site is located within Sections 23, 26, 27, 34 and 35, T10N/R15W (M.D.B. & M.) County of Kern, State of CA.

The project proponent is requesting (a) one (1) Conditional Use Permit (CUP 7, Map 216) to allow for the construction and operation of a solar photovoltaic electrical generating facility (Section 19.12.030.G) in an A (Exclusive Agricultural) and OS (Open Space) District. Permanent facilities would include: solar panels; service roads; on-site battery storage systems; communication cables; overhead and underground transmission lines; and electrical switchyards; inverters and transformers; on approximately 383 acres of private and public lands. Private lands comprise 150 acres and Bureau of Land Management Public Lands comprise 233 acres of the project.

The Kern County Planning and Natural Resources Department and the Bureau of Land Management, as Lead Agencies, have determined that preparation of an Environmental Impact Report/Environmental Assessment would be appropriate for the referenced project. Enclosed is a copy of the Draft EIR/EA.

If we have not received a reply from you by **March 28, 2020, at 5:00 P.M.**, we will assume that you have no comments regarding this Draft EIR/EA.

Should you have any questions regarding this project, please do not hesitate to contact me at **(661) 862-8793 or via email at mayesj@kerncounty.com.**

Sincerely,

Janice Mayes

Janice Mayes, Planner III
Advanced Planning Division

Enclosure

CUP #7, Map #216 Camino Solar Project
EIR 03-17 - WO #PP17125
I:\Planning\WORKGRPS\WP\LABELS\eir03-17jkm.ec.doc
Sc 02/06/20

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

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

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

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

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

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

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

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

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

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

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

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

Antelope Valley Resource Cons Dist
44811 Date Avenue, #G
Lancaster, CA 93534-3136

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

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

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

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

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

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

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

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

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

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

Office of the State Geologist
Headquarters
801 "K" Street, MS 12-30
Sacramento, CA 95814

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

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

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

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

State Dept of Food & Agriculture
1220 "N" Street
Sacramento, CA 95814

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

Integrated Waste Management
P.O. Box 4025, MS #15
Sacramento, CA 95812-4025

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

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

Kern County
Agriculture Department

Kern County Administrative Officer

Kern County Public Works Department/
Building & Development/Floodplain

Kern County Public Works Department/
Building & Development/Survey

Kern County
Env Health Services Department

Kern County Fire Dept
David Witt, Interim Fire Chief

Kern County Fire Dept
Cary Wright, Fire Marshall

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

Kern County Museum
3801 Chester Avenue
Bakersfield, CA 93301

Kern County Parks & Recreation

Supervisor Zack Scrivner
2nd District

Kern County Sheriff's Dept
Administration

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

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

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

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

Kern High School Dist
5801 Sundale Avenue
Bakersfield, CA 93309

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

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

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

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

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

Kern Audubon Society
Attn: Frank Bidart, President
4124 Chardonnay Drive
Bakersfield, CA 93306

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

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

Anitra Kass
Pacific Crest Trail Association
41860 Saint Annes Bay Drive
Bermuda Dunes, CA 92203

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

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

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

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

Joyce LoBasso
P.O. Box 6003
Bakersfield, CA 93386

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Eight Bar Ranch
Jon and Helen Lantz
11300 Cameron Canyon Road
Mojave, CA 93501

Mojave Foundation
Attn: Todd Quelet
16922 Airport Boulevard
Mojave, CA 93501

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

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

David Walsh
22941 Banducci Road
Tehachapi, CA 93561

Terra-Gen
Randy Hoyle, Sr. Vice Pres
11512 El Camino Real, Suite 370
San Diego, CA 92130

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

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

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

EDP Renewables Company
53 SW Yamhill Street
Portland, OR 97204

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

Darren Kelly, Sr. Business Mgr
Terra-Gen Power, LLC
1095 Avenue of the Americas, 25th Floor, Ste A
New York, NY 10036-6797

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

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

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

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

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

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

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

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

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

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

Carl B. Symons, Field Manager
Bureau of Land Management
Ridgecrest Field Office
300 S. Richmond Rd.
Ridgecrest, CA 93555

Cedric Perry
California Desert District
Bureau of Land Management
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553

Sandra McGinnis
California State Office
Bureau of Land Management
2800 Cottage Way, Suite W-1623
Sacramento, CA 95825

Lynnette Elser
California Desert District
Bureau of Land Management
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553

Kim Marsden
California Desert District
Bureau of Land Management
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553

Dylan M. Fuge, Attorney Advisor,
Division of Land & Water Resources
Office of the Solicitor
U.S. Department of the Interior
1849 C Street, NW
Mail Stop 5530
Washington, DC 20240

Debbie Allen, Administrative Asst
National Park Service, Pacific West Region Rivers, Trails & Conservation Assistance Program
1111 Jackson Street, Suite 700
Oakland, CA 94607

Beth Boyst, Trail Manager
USDA-FS Pacific Southwest Regional Office (Region 5)
1323 Club Dr.
Vallejo, CA 94592

Ray Bransfield
Renewable Energy Biologist
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003

Lisa Gymer, Sr Environmental Scientist
California Department of Fish and Wildlife
1234 East Shaw Avenue
Fresno, CA 93710

Mary Wuester,Tribal Chair
Lone Pine Paiute-Shoshone Tribe
P.O. Box 747
Lone Pine CA 93545

Dale Delgado Jr.
Tribal Council Chair
Bishop Paiute Tribe
50 Tu Su Lane
Bishop CA 93514

Robert Gomez
Tribal Council Chair
Tubatulabals of Kern Valley
P.O. Box 226
Lake Isabella CA 93240

Council Chairman
Monache Intertribal Council
P.O. Box 168
Kernville CA 93238

Genevieve Jones,Tribal Chair
Big Pine Paiute Tribe of the Owens Valley
P.O. Box 700
Big Pine CA 93513

Bob Robinson, Co-Chair & Tribal Historic Preservation Officer
Kern Valley Indian Community
P.O. Box 401
Weldon CA 93283

Israel Naylor
Tribal Council Chair
Fort Independence Paiute Tribe
P.O. Box 67
Independence CA 93526

Patricia Henry, Council Chair
Nuui Cunni Interpretative Center
P.O. Box 3984
Wofford Heights CA 93285akersfield, CA 93301

Juanita Eyherabide
5284 Kent Drive
Bakersfield, CA 93306

Wendy Reed
Director
Antelope Valley Conservancy
PO Box 3133
Quartz Hill, CA 93586-0133

Bruce Palmer
Chairperson
Desert Tortoise Council
4654 East Avenue S #257B
Palmdale, CA 93552

Adams Broadwell Joseph & Cardozo
Cody Elliott
601 Gateway Boulevard Suite 1000
South San Francisco, CA 942080-7037

Scott Kringen, Sr Business Developer
Avangrid Renewables
Development West
1125 NW Couch St. STE 700,
Portland, OR  97209

Pauline Roberts, Senior Biologist
SWCA
150 South Arroyo Parkway, 2nd Floor
Pasadena, CA 91105

**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/Environmental Assessment (EIR/EA) 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/EA are available for review at the Planning Natural Resources Department, 2700 "M" Street, Suite 100, Bakersfield, CA 93301 or on the Departmental website **(https://kernplanning.com/planning/environmental-documents/).**

A public hearing has been scheduled with the Kern County Planning Commission to receive comments on the document on: **May 28, 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 28, 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:** Camino Solar Project, by Aurora Solar, LLC (PP17125); Conditional Use Permit No 7, Map 216

**Project Location:** The proposed project site is located approximately 12 miles south of the City of Tehachapi and approximately 16 miles northwest of the unincorporated community of Rosamond. The proposed project sits on both private and publicly owned lands north of Rosamond Blvd at 170th Street West in the unincorporated area of Kern County. The proposed project site is located within Sections 23, 26, 27, 34 and 35, T10N/R15W (M.D.B. & M.) County of Kern, State of CA.

**Project Description:** The project proponent is requesting (a) one (1) Conditional Use Permit (CUP 7, Map 216) to allow for the construction and operation of a solar photovoltaic electrical generating facility (Section 19.12.030.G) in an A (Exclusive Agricultural) and OS (Open Space) District. Permanent facilities would include: solar panels; service roads; on-site battery storage systems; communication cables; overhead and underground transmission lines; and electrical switchyards; inverters and transformers; on approximately 383 acres of private and public lands. Private lands comprise 150 acres and Bureau of Land Management Public Lands comprise 233 acres of the project.

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

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

**For further information, please contact Janice Mayes, Planner 3 (661) 862-8793.**

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

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

**MOJAVE DESERT NEWS**

JKM (2/13/2020)

cc: County Clerk (2) (with fee)
Environmental Status Board
Sierra Club/Kern Kaweah Chapter
LiUNA
Supervisorial District No. 2
California Native Plant Society/Kern Chapter
Kern County Archaeological Society
Native American Heritage Pres. Council/Kern County
Center on Race, Poverty and Environment (2)

CUP #7, Map #216 Camino Solar Project
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Sc 02/06/20

476 052 13 00 6
BOON DOROTHY I LIVING TRUST
2151 OAKLAND RD SP 158
SAN JOSE CA 95131-1518

476 062 44 00 9
BURPO TRAVIS F & NADINE J
1573 UNIVERSITY AV
MADERA CA 93637

476 110 12 00 6
CALIFORNIA PORTLAND CEMENT CO
2025 E FINANCIAL WY
GLENDORA CA 91741-4692

476 100 03 00 7
CHRISTIANSEN MELANIE DAWN & ROGER KENNETH TR
P O BOX 416
ROSAMOND CA 93560

476 090 12 00 1
COE JERALD
43056 PARTRIDGE RANCH RD
HEMET CA 92544-6510

476 052 23 00 5
COULL FAMILY TRUST
4045 WHITESAIL CI
WESTLAKE VILLAG CA 91361-3813

476 062 45 00 2
CROWELL EDWARD A
5019 WEST ARVADA ST
TORRANCE CA 90503

476 110 03 00 0
DOMINGUEZ PAUL R & DIANA L REV LIV TR
6112 COPPER CREST DR
LAS VEGAS NV 89130-1996

476 052 03 00 7
ENXCO DEV CORP
PO BOX 504080
SAND DIEGO CA 92150-4080

476 052 07 00 9
ENXCO DEV CORP
P O BOX 581043
PALM SPRINGS CA 92258

476 090 13 00 4
ENXCO DEV CORP
15445 INNOVATION DR
SAN DIEGO CA 92128-3432

476 110 26 00 7
ENXCO DEVELOPMENT CORPORATION
PO BOX 504080
SAN DIEGO CA 92150-4080

476 062 23 00 8
EVANS NANCY H TRUST
336 PEACH TREE LN
NEWPORT BEACH CA 92660

476 090 01 00 9
EYHERABIDE LAND CO LLC
5284 KENT DR
BAKERSFIELD CA 93306-3908

476 052 14 00 9
FINGER RAINER R
5060 LAUREL PARK DR
CAMARILLO CA 93012

476 061 10 00 3
FISCHER G & K LIVING TRUST
2301 PENINSULA RD
OXNARD CA 93035-2920

476 061 13 00 2
FISCHER GRANDCHILDRENS TRUST
P O BOX 1039
PIONEER CA 95666

476 090 02 00 2
FOX FAMILY TRUST
8612 NELSON WY
ESCONDIDO CA 92026-5217

476 110 04 00 3
FRAZIER ALMA AMERICA
41741 FIRENZE ST
LANCASTER CA 93536-2973

476 052 08 01 1
FRY RONALD CARMAN 2019 REV LIV TRUST
8371 CHARLOMA DR
DOWNEY CA 90240-3355

476 052 10 00 7
GINDI GRANDCHILDREN FUNG LP
218
10100 CULVER BL
CULVER CITY CA 90232

476 062 10 00 0
GRIER FAMILY TRUST
24441 SERRA PL
TEHACHAPI CA 93561-9290

476 061 08 00 8
HABER RANDEE ELLEN TRUST
158 N IVY AV
MONROVIA CA 91016-2220

476 110 16 00 8
HEMENWAY KAREN M
11001 SUNNYBRAE AV
CHATSWORTH CA 91311-1653

476 052 15 00 2
HRENIUC GRIGORE B & DIANA K
14239 N 48 DR
GLENDALE AZ 85306

476 062 21 00 2
KENIS PAUL & JUDITH TR
95574 N BANK ROGUE RIVER RD
GOLD BEACH OR 97444-8513

476 100 01 00 1
KNIGHT CHARLES M & ESTRELLA V
621 NE FOSTER LN
BREMERTON WA 98311-8127

476 052 04 00 0
LEE DON W
6335 W AVENUE J3
LANCASTER CA 93536-7555

476 140 01 00 3
LEWIS LEE C
4256 CALDERWOOD DR
SHREVEPORT LA 71119

476 052 16 00 5
LIEN FAMILY SURVIVORS TRUST
2338 RUSTIC GATE WY
HACIENDAHTS CA 91745-5631

476 062 08 00 5 **DUP**
MARSHALL JAMES V ET AL
ADDRESS UNKNOWN

476 110 10 00 0
MILLER CHRIS
3172 EAGLE WY
ROSAMOND CA 93560

476 110 24 00 1
OLSON GARY & PHYLLIS
4830 KISHA AV
PAHRUMP NV 89061-8733

476 110 19 01 6
RYU SUN HAE & HACK SUN REV TR
6403 E PHEASANT LN
ORANGE CA 92869

476 130 06 00 5
SECOR KEVIN & BRENDA
16814 HIAWATHA ST
GRANADA HILLS CA 91344-7303

476 110 21 00 2
TERNDRUP GREGORY
2909 HUNTINGTON AV
REDWOOD CITY CA 94063

476 130 02 00 3
TOMLINSON JERRY & MELINDA M
1610 W AVE L-4
LANCASTER CA 93534

476 052 02 00 4
U S A
450 GOLDEN GATE AVE
SAN FRANCISCO, CA 94102

476 062 46 00 5
BALTAZAR TRUST
2829 AGATE DR
SANTA CLARA CA 95051

476 110 02 00 7
LOWE WILLIAM T & FLORENCE R TRUST
18361 CHASE ST
NORTHRIDGE CA 91325-3608

476 110 25 00 4
MC GUIRE WILEY E & RITA L
39401 EUREKA HILL RD
POINT ARENA CA 95468-8800

476 062 09 00 8
MITCHELL ROBERT R TR
4024 WAWONA ST
LOS ANGELES CA 90065

476 110 06 00 9
RAVI ANKINEEDO PRASADARAO
12400 MELODY LN
LOS ALTOS HILLS CA 94022-3213

476 110 08 00 5
SCHOLL FRANCIS N JR & MARILYN E TRUST
4124 EUCALYPTUS LN
WINTERS CA 95694-9640

476 090 03 00 5
SESCU MARCEL & FLOAREA
5801 AMEROCK CT
BAKERSFIELD CA 93306-4654

476 110 20 00 9
TERNDRUP GREGORY S
2909 HUNTINGDON DR
REDWOOD CITY CA 94063

476 090 17 00 6
TOOHEY RACHEL
3770 N GREENWICH WY
MERIDIAN ID 83646-2698

476 090 18 00 9
WOITZMAN JEAN B TR
P O BOX 2222
MALIBU CA 90265

476 062 04 00 3
MANNIKUS IGOR & ERLINDA
10 PIKEVIEW TL
SECAUCUS NJ 07094

476 090 15 00 0
MENDIVIL FAMILY TRUST
21333 S CONRADI AV
TORRANCE CA 90502

476 110 09 00 8
NAKAO HARUMI
16512 GRAMERCY PL
GARDENA CA 90247-4614

476 110 14 00 2
REDMOND TIM LIV TR
PO BOX 160
LAKE HUGHES CA 93532-0160

476 130 15 00 1
SCHWIND DAVID
1600 TAFT RD
CHESAPEAKE VA 23322-2714

476 110 23 00 8
TERNDRUP FRED E & JOAN
38821 ROBIN CREST CT
OSKHURST CA 93644

476 062 05 00 6
THOMAS WILLIAM M & DEBBY L
858 CALLE PECOS
THOUSAND OAKS CA 91360

476 090 19 00 2
TURNER ANGELA G
31904 CEDARCROFT RD
ACTON CA 93510-2119

476 090 14 00 7
WOOD FAMILY TRUST
38254 WELD COUNTY RD 43
EATON CO 80516

# 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 #** 2018061031

**Project Title:** Camino Solar Project by Aurora Solar, LLC; (Avangrid Renewables, LLC)

Lead Agency: Kern County Planning and Natural Resources Department
Contact Person: Janice Mayes
Mailing Address: 2700 "M" Street Suite 100
Phone: (661) 862-8793
City: Bakersfield
Zip: 93301-2323
County: Kern

**Project Location:** County: Kern
City/Nearest Community: Tehachapi, Rosamond and Mojave, CA
Cross Streets: Rosamond Blvd and 170th Street West (nearest)
Zip Code: 92537
Lat. / Long.: 34° 55'49.65233" N/118° 26'39.60078 W
Total Acres:
Assessor's Parcel No.: Multiple
Section: 23, 26, 27, 34, 35 Twp.: 10N Range: 15W Base: MDB&M
Within 2 Miles: State Hwy #: N/A
Waterways:
Airports: N/A
Railways: N/A
Schools: N/A

**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. 0 Acres 383 of 869 Employees 200 temp
- ☐ Industrial: Sq.ft. Acres Employees
- ☐ Educational
- ☐ Recreational
- ☐ Water Facilities: Type MGD
- ☐ Transportation: Type
- ☐ Mining: Mineral
- ☒ Power: Type Solar MW 44
- ☐ Waste Treatment: Type MGD
- ☐ Hazardous Waste: Type
- ☐ Other:

**Project Issues Discussed in Document:**

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

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

Undeveloped Land, Wind Energy Turbines, grazing land. *Zoning:* A (Exclusive Agriculture) and OS (Open Space); Kern County General Plan: 1.1 (State and Federal Lands); 2.1 (Geological Hazard); 8.3 (Exclusive Agriculture); 8.5 (Resource Management)

**Project Description:** The project proponent is requesting (a) one (1) Conditional Use Permit (CUP 7, Map 216) to allow for the construction and operation of a solar photovoltaic electrical generating facility (Section 19.12.030.G) in an A (Exclusive Agricultural) and OS (Open Space) District. Permanent facilities would include: solar panels; service roads; on-site battery storage systems; communication cables; overhead and underground transmission lines; and electrical switchyards; inverters and transformers; on approximately 383 acres of private and public lands. Private lands comprise 150 acres and Bureau of Land Management Public Lands comprise 233 acres of the project.

Reviewing Agencies Checklist

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

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

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

Starting Date 2/13/2020 Ending Date 3/28/2020

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

Consulting Firm: Kern County Planning & Natural Resources Dept
Address: 2700 M Street, Suite 100
City/State/Zip: Bakersfield, CA 93301
Contact: Janice Mayes
Phone: (661) 862-8793

Applicant: Aurora Solar, LLC Attn: Scott Kringen
Address: 1125 NW Couch, Suite 700
City/State/Zip: Portland, OR 97209
Phone: (503) 478-6317

**Signature of Lead Agency Representative:** Janice Mayes **Date:** 2/13/2020

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

# Draft
# Environmental Impact Report/Environmental Assessment

**SCH# 2018061031**

## Volume 1

**Camino Solar Project**
**By Aurora Solar, LLC.**

**Conditional Use Permit No. 7, Map No. 216**


**Kern County Planning and Natural Resources Department**
2700 M Street, Suite 100
Bakersfield, CA 93301-2370
(661) 862-8600
PP 17125

*Technical Assistance by:*

Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017
(213) 599-4300


February 2020

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## Appendices



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Chapter 1
# Executive Summary

## 1.1 Introduction

The Camino Solar Project (project), proposed by Aurora Solar, LLC (project proponent/operator), would develop a 44 megawatt (MW) photovoltaic (PV) solar facility on 383 acres of private and public land. The project includes associated infrastructure including energy storage, a 34.5 kV underground electrical collector line and access roads. The project would connect to the existing Manzana Wind substation, where transformers would increase the voltage from 34.5 kV to 220 kV. The energy would then be transferred to the Southern California Edison (SCE) Whirlwind Substation using the existing Manzana Wind 220 kV generation-tie (gen-tie) line.

The project proponent/operator is requesting one Conditional Use Permit (CUP) No. 7, Map No. 216 from Kern County to allow for the construction and operation of a solar electrical generating facility on a site with an "A" (Exclusive Agriculture) and Open Space zoning classifications. The project proponent/operator is also requesting California Environmental Quality Act (CEQA) review for the project.

Although approximately 233 acres of the Camino Solar Project does not fall under Kern County land use jurisdiction, the BLM has requested deferral to Kern County for monitoring compliance with the mitigation measures and Conditions of Approval, which will be adopted for the project. The aforementioned request includes the issuance of grading and building permits on Camino Solar, subject to Kern County requirements. Kern County is in concurrence with the aforementioned request. However, in the Steps to Compliance, which will be a part of the approved Mitigation Measure Monitoring Program, it will be stipulated that a copy of approved permits and reports shall be submitted by Kern County to the BLM, for their records, where applicable.

The project site consists of 18 parcels and the Assessor Parcel Numbers (APNs) are summarized in **Table 1-1**, *Camino Solar Project Assessor Parcel Numbers*, below.

**TABLE 1-1: CAMINO SOLAR PROJECT ASSESSOR PARCEL NUMBERS (APNS)**

| | Assessor Parcel Number (APN) | Public or Private Ownership | Total Proposed ROW/Leased Parcel Size (acres) | Project Parcel Area (acres) |
|---|---|---|---|---|
| 1 | 476-061-09 | Public | 359.3 | 233.3 |
| 2 | 476-052-09 | Private | 324.9 | 65.3 |
| 3 | 476-110-03 | Private | 45.9 | 26.2 |
| 4 | 476-110-04 | Private | 45.3 | 8.0 |
| 5 | 476-062-04 | Private | 22.4 | 0.5 |
| 6 | 476-110-14 | Private | 23.6 | 10.9 |
| 7 | 476-110-16 | Private | 20.5 | 17.8 |
| 8 | 476-110-19 | Private | 20.6 | 3.4 |
| 9 | 476-130-11 | Private | 4.1 | 2.1 |
| 10 | 476-130-02 | Private | 2.5 | 0.4 |
| 11 | 476-130-03 | Private | 2.5 | 2.4 |
| 12 | 476-130-04 | Private | 2.5 | 1.9 |
| 13 | 476-130-10 | Private | 2.5 | 0.3 |
| 14 | 476-130-12 | Private | 2.1 | <0.1 |
| 15 | 476-130-13 | Private | 2.1 | 1.9 |
| 16 | 476-130-14 | Private | 4.1 | 3.8 |
| 17 | 476-130-17 | Private | 2.8 | 1.9 |
| 18 | 476-130-18 | Private | 2.8 | 1.9 |
| **Totals** | | | **890.5** | **383** |

This Draft Environmental Impact Report/Environmental Assessment (EIR/EA) has been prepared by Kern County and Bureau of Land Management (BLM). Kern County is the Lead Agency under the California Environmental Quality Act (CEQA) and BLM is the Lead Agency under the National Environmental Policy Act (NEPA). The Draft EIR/EA 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/EA will be used by Kern County to determine whether to approve the requested CUP (CUP No. 7, Map No. 216) required for the project.

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

# 1.2 Project Summary

The project would develop a solar PV energy generating facility. As shown in **Figure 3-1**, *Project Vicinity*, and **Figure 3-2**, *Project Site*, in Chapter 3, *Project Description*, of this EIR, the project site is located in the southern central portion of Kern County near the unincorporated community of Rosamond. The project would generate approximately 44 MW of renewable electrical energy for delivery to the statewide grid. The project's facilities would include solar panels/modules, inverters, an energy storage system, an existing substation, internal service roads, telecommunication equipment, including underground and overhead fiber optics, and underground electrical collection systems. A buried 34.5 kV collector system would connect to the transformers of each array. The combined energy of the solar field would transfer to the Manzana Project substation using a new approximately 0.75-mile-long underground 34.5 kV collector line across private lands, with a single riser pole connecting the line to the existing aboveground Manzana Project transmission line at the interconnection with the substation. The different 34.5 kV circuits would gather at the substation (or switchyard) and would then be sent to the overhead electricity lines leading to a grid interconnection point.

The project would ultimately cover 383 acres and would include the following components:

- **Solar PV Generating Facilities:** Installation of PV modules made of thin film or polycrystalline silicon material covered by glass, mounted on a galvanized metal fixed tilt or single axis racking system and connected to inverters
- **Energy Storage Facility:** Installation of an energy storage system and appurtenances that would provide energy storage capacity for the electric grid.
- **Substations:** The project would connect to the existing Manzana Wind project substation; no new substations would be constructed. The project would install circuit breakers, disconnect switches, metering and protection equipment, main step-up transformer(s), and other electrical equipment within the Manzana Wind project substation. The project would interconnect to the existing Whirlwind Substation using existing infrastructure associated with Manzana Wind.
- **Electrical Collector System and Inverters:** Underground medium voltage collection systems would be used 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 solar substation.
- **Site Access and Security:** Onsite access roads and perimeter security fencing and nighttime directional lighting.

The solar and/or energy storage facilities are intended to operate year-round and would be designed to produce approximately 44 MW of solar power and/or energy storage capacity at the Point of Interconnection (Whirlwind Substation) to the transmission grid.

## Discretionary Entitlements Required

The Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM) are the lead agencies for the project and have discretionary authority over the project. To implement this project, the project operator would need to obtain, at a minimum, the permits/approvals listed below. Additionally, the EIR/EA, 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 Environmental Impact Report (FEIR).
- Adoption of Findings of Fact and Statement of Overriding Considerations (Sections 15091 and 15093 of the CEQA *Guidelines*).
- Approval of Mitigation Measure Monitoring Program
- Approval of Conditional Use Permit (CUP) No. 7, Map 216 for construction and operation of a 44 MW solar project.
- Kern County construction, grading, and building permits.

### Other Responsible Agency Entitlements

- BLM right-of-way (ROW) grant to construct, operate, and decommission/restore a 44 MW solar project partially located on 233 acres of BLM-administered land.
- Regional Water Quality Control Board Section 401 certification and waste discharge requirements, if required.
- Eastern Kern County Air Pollution Control District Authority to Construct/Permit to Operate
- California Department of Fish and Wildlife (CDFW), if required.
- United States Fish and Wildlife Service (USWFWS), if required

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

## 1.3 Relationship of the Project to Other Energy Projects

The project is being developed independently of other approved or proposed solar and wind projects in the County. If approved, the project facilities would be subject to their own use permits, conditions of approval, interconnection agreements, and power purchase agreements. Kern County understands that the project facilities would be built and operated independently of any other energy project.

The proximity of the proposed project to the Manzana Project means that the project would share existing infrastructure and thereby reduce the overall project footprint and associated environmental impacts. For example, the project would share Manzana's O&M building, substation, access roads and gen-tie line to Southern California Edison's existing Whirlwind substation. Camino Solar would share facilities with the Manzana Project under an already approved private shared use agreement.

## 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/EA will analyze the environmental impacts of the proposed project. The Kern County Planning Commission and BLM will consider the information in this EIR/EA, 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 Planning Commission and BLM (or the Kern County Board of Supervisors if the decision of the Kern County Planning Commission is appealed), 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/EA 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 Purpose and Use of the EA

An EA is intended to be a concise public document that provides sufficient evidence and analysis for determining the significance of effects from a proposed action (40 CFR 1508.9) and that serves as a basis for reasoned choice. This EIR/EA has been organized such that all discussion relevant to the NEPA process, including the full contents of the EA, are wholly contained in Chapter 11 of this EIR/EA. The EA provides the following content:

- Introduction
- BLM's purpose and need and decision to be made
- Identification of issues for analysis
- Description of the proposed action and alternatives analyzed in the EA
- Analysis of land use plan conformance and identification of relationships to statutes, regulations, and other plans
- Analysis of environmental consequences of the proposed action and alternatives
- Summary of NEPA consultation and coordination and a list of preparers of the EA

The BLM will decide whether to grant, grant with conditions, or deny the requested ROW to construct, operate, maintain and decommission/restore the Camino Solar Project based upon the analysis presented in the EA. BLM will accept comments on the EA for up to 30 days after publication. After the public comment period ends, and if the EA analysis shows that the project would have no significant environmental effects, the BLM will prepare a Finding of No Significant Impact (FONSI). The FONSI would succinctly state the reasons for deciding that the project will have no significant environmental effects. After preparation of the FONSI, the BLM will prepare and sign a Decision Record that will document BLM's decision on whether to grant, grant with conditions, or deny the requested ROW.

# 1.6 Project Overview

## Regional Setting

The project site is located in the southern central portion of Kern County, in central California as shown in **Figure 3-1**, *Project Vicinity*, in Chapter 3, *Project Description*, of this EIR/EA. The project site is located at southeastern base of the Tehachapi Mountains at the western edge of the Antelope Valley, on lands that gradually slope downward from the northwest to the southeast. Elevations on the project site ranges from approximately 2,720 feet to 3,020 feet (829 to 920 meters) above mean sea level (msl). This area is geographically defined by the intersection where the Tehachapi Mountains meet the San Gabriel Mountains.

The project site is adjacent to northern Los Angeles County, approximately 16 miles northwest of the community of Rosamond, approximately 12 miles south of the City of Tehachapi, and approximately 44 miles southeast of the City of Bakersfield. Other communities within the vicinity of the proposed additional property include California City in Kern County and the Cities of Lancaster and Palmdale in Los Angeles County, which are approximately 28 miles northeast, 20 miles southeast, and 27 miles southeast of the project site, respectively. Edwards Air Force Base is located approximately 15.5 miles east of the project site's eastern boundary.

Land usages in the project area consist of a mix of agricultural grazing, undeveloped land, scattered single-family residences, and several approved or proposed large-scale solar facilities. Several commercial wind projects are also operating north of the Whirlwind Substation. Topography across the project site is relatively flat and gradually slopes downward from the northwest to the southeast. Desert vegetation dominates the region.

## Surrounding Land Uses and Project Site Conditions

The area surrounding the project site is characterized by scattered vacant land and low population density. Existing development in the project vicinity includes rural access roads; rural residences located along Rosamond Boulevard, approximately 5.25 miles southeast of the project site, and along 140th Street, approximately 4.75 miles southeast of the project site; producing and non-producing water wells; off-highway vehicle use; cattle ranching and maintenance facilities; mining; wind and solar energy; and planned/existing met towers. Forest, parkland, and preserve areas in the vicinity of the project site include the Angeles National Forest located in Los Angeles County, approximately 34 miles south; the Desert Pines Wildlife Sanctuary and the Arthur B. Ripley Desert Woodland State Park located in Los Angeles County, approximately 11 miles to the south; and the Antelope Valley California Poppy Reserve located in Los

Angeles County, approximately 13.5 miles to the south. The Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail or PCT) passes northwest of the project boundary. The Los Angeles Aqueduct is south of the project site, along 170th Street West.

There are several existing and permitted solar energy, wind energy, and transmission projects in the region where the project site is located. The RE Garland Solar Project is located immediately adjacent to the project site's eastern boundary and was approved by the Kern County Board of Supervisors in 2015. An expanded list of existing, approved, and pending projects in the vicinity of the project site is provided in **Table 3-5**, *Cumulative Projects List*.

The project site is located within the central-eastern portion of the Manzana Project, which began operations in 2012 and is traversed by a network of dirt roads. Lands to be developed within the project site include 233 acres of public lands administered by the BLM Ridgecrest Field Office and 150 acres of privately held lands. The project site is comprised of primarily undeveloped agricultural land that is not currently irrigated.

The project site is within the boundaries of BLM's California Desert Conservation Area Plan (CDCA) and the California Desert Renewable Energy Conservation Plan (DRECP). The project site is designated as Variance Process lands within the DRECP. According to the DRECP, Variance Process Lands are available for solar, wind, and/or geothermal development. Agricultural uses are not permitted on Variance Process Lands. The vegetation communities at the project site are largely dominated by non-native species, limiting the potential habitat quality for native plants and wildlife. Limited portions of the proposed project site contain native habitat types that include Joshua Tree Woodlands, Mojave Desert Wash Scrub, Mojavean Juniper Woodland and Scrub, and Non-native Grassland, as classified according to the Manual of California Vegetation, online edition.

As shown in **Figure 3-3**, *Flood Zone Hazards*, in Chapter 3, *Project Description*, of this EIR, the project site is located within Flood Zone X as designated by the Flood Insurance Rate Map (FIRM) (06029C3975E) as issued by the Federal Emergency Management Agency (FEMA). Flood Zone X is an identified area determined to be outside the 500-year floodplain and classified as being within the 1 percent and 0.2 percent annual chance of flooding.

State-designated Alquist-Priolo Earthquake Fault Zones have not been identified on the project site; however, the area is considered to be seismically active. The project site is located largely between the Tylerhorse and Cottonwood Faults. The Tylerhorse Fault has been mapped just north of the site, and the Cottonwood Fault is southwest of the site and crosses the southern extension of the project site.

The proposed 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 Rosamond substation, located approximately 14.5 miles southeast from the project site, at 3179 35th Street West in the community of Rosamond. The closest KCFD fire station is Station No. 15 (Rosamond), located approximately 14.5 miles southeast of the project site at 3219 35th Street West in the community of Rosamond. The closest hospital to the project site is the Adventist Health Tehachapi Valley Hospital, located at 1100 Magellan Drive, Tehachapi, approximately 13.8 miles north of the project site. The next nearest hospital is Antelope Valley Hospital, in the city of Lancaster, approximately 22.5 miles to the southeast. The closest school to the project site is Tropico Middle School, located approximately 16 miles southeast of the project site in the community of Rosamond.

The project site is not located within the boundaries of an Airport Influence Area as identified in the Kern County Airport Land Use Compatibility Plan. The nearest airport is the Skyotee Ranch Airport, which is for private use only and is located 6.5 miles south of the project site. The project site is located approximately 14 miles west of the Rosamond Skypark, a privately-owned and operated residential skypark and 18 miles northwest of the General William J. Fox Airfield, the closest publicly owned airport. State Route (SR) 138 is located 8 miles south of the project site, and SR 14 is located approximately 15 miles east of the site.

**Table 1-2**, *Project Site and Surrounding Land Uses*, below, summarizes the existing land uses, map code designations, and zoning classifications on the project site and surrounding area. **Figure 3-4**, *Existing General Plan Designations* and **Figure 3-5**, *Existing Zoning Classifications*, in Chapter 3, *Project Description*, of this EIR, show the land use designations and the existing zoning of the project site and its surrounding area.

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

| | Existing Land Use | Existing Land Use Designations | Existing Zoning Classifications |
|---|---|---|---|
| Camino Solar Project Site | Undeveloped and Manzana Project Wind Turbines | 1.1 (State or Federal Land); 8.3 (Extensive Agriculture); 8.5 (Resource Management); and 8.3/2.1 (Extensive Agriculture/Seismic Hazard) | A WE (Exclusive Agriculture, Wind Energy); A GH (Exclusive Agriculture, Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); A (Exclusive Agriculture); and OS (Open Space) |
| North | Undeveloped and Manzana Project Wind Turbines | 1.1 (State or Federal Land); 8.3 (Extensive Agriculture) | A (Exclusive Agriculture); A WE (Exclusive Agriculture, Wind Energy) |
| South | Undeveloped, Scattered Residential, and Manzana Project Wind Turbines | 8.3 (Extensive Agriculture); 8.5 (Resource Management); and 2.1 (Seismic Hazard) | A (Exclusive Agriculture); A WE (Exclusive Agriculture, Wind Energy); A GH (Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); PL RS GH (Platted Lands, Residential Suburban, Geologic Hazard) and PL RS (Platted Lands, Residential Suburban) |
| East | Undeveloped and Manzana Project Wind Turbines | 8.3 (Extensive Agriculture); 8.5 (Resource Management); | A (Exclusive Agriculture); A WE (Exclusive Agriculture, Wind Energy); and PL RS MH (Platted Lands, Residential Suburban, Mobilehome); PL RS (Platted Lands, Residential Suburban); and OS (Open Space). |
| West | Undeveloped, Scattered Residential and Manzana Project Wind Turbines | 8.3 (Extensive Agriculture); and 2.1 (Seismic Hazard) | A (Exclusive Agriculture); A GH (Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); and A WE (Exclusive Agriculture, Wind Energy) |

# Project Objectives

The proposed project would provide Kern County as well as 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. The following is a list of project objectives:

- Generate approximately 44 MW of electricity at a cost that is competitive on the renewable market.
- Establish solar PV power-generating facilities 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.
- Locate the proposed project in Kern County near an existing electrical distribution system.
- Minimize the potential impact on the environment by the following:
  - Maximize the use of existing infrastructure (transmission lines and roads)
  - Minimize the potential impacts on threatened and endangered species
  - Reduce the emission of greenhouse gases from the generation of electricity
- Interconnect directly to SCE's and/or California Independent System Operator electrical transmission system.
- Use proven and established PV technology that is efficient, requires little maintenance, and is recyclable.
- Establish energy storage facilities of sufficient size and configuration to reliably store electricity in an economically feasible and commercially financeable manner that can be marketed to different power utility companies.
- Assist California utilities in meeting their obligations under California's RPS. In April 2011, Governor Brown signed into law SB X1-2, which establishes a new RPS for all electricity retailers in the state. Electricity retailers must adopt the new RPS goals of 20 percent of retails sales from renewables by the end of 2013, 25 percent by the end of 2016, with the 33 percent requirement being met by the end of 2020.
- Assist California utilities in meeting their obligations under California's RPS under SB 350 (2015), which requires that 50 percent of all electricity sold in the State be generated from renewable energy sources by December 31, 2030.
- Assist California in meeting greenhouse gas (GHG) emissions reduction goal by 2020 as required by the California Global Warming Solutions Act (AB 32), as amended by SB 32 in 2016.

# Project Characteristics

The proposed project would include the development of solar facilities and associated infrastructure with the capacity to generate approximately 44 MW of renewable electric energy. The proposed project would consist of approximately 180,000 solar panels arranged in a grid-pattern over the proposed project site. Power generated by the proposed project would be transferred to the Manzana substation through a new underground 34.5 kV collector line and then transferred to the Whirlwind substation using the existing

Manzana Wind 220 kV Gen-tie line. The proposed solar facilities are intended to operate year-round and would generate electricity during daylight hours when electricity demand is at its peak.

## Offsite Facilities

- An approximately 0.75-mile underground collection line to convey electricity from the array blocks to the project substation. Four options are proposed for the collection line routes; two North/South Options 1 and 2, and two East/West Options A and B, as depicted in **Figure 3-6,** *Site Security and Fencing*.

# 1.7 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.

## 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

## Impacts of the Project

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

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

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality

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

## Less Than Significant Impacts

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

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

| Impact | Mitigation Measures |
|---|---|
| Aesthetics (Project) | MM 4.1-1 through MM 4.1-6 |
| Agriculture and Forest Resources (Project and Cumulative) | No mitigation required |
| Biological Resources (Project) | MM 4.4-1 through MM 4.4-13 as well as MM 4.1-4, MM 4.7-4 and MM 4.9-2 |
| Cultural Resources (Project and Cumulative) | MM 4.5-1 through MM 4.5-3 |
| 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 4.14-1, and MM 4.17-1 |
| Hydrology and Water Quality (Project and Cumulative) | MM 4.7-7, MM 4.9-1, and MM 4.10-1 |

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

| Impact | Mitigation Measures |
|---|---|
| Land Use and Planning (Project and Cumulative) | MM 4.11-1 |
| Mineral Resources (Project and Cumulative) | No mitigation required |
| Noise (Project and Cumulative) | No mitigation required |
| Public Services (Project and Cumulative) | MM 4.14-1 and MM 4.14-2 |
| Transportation (Project and Cumulative) | MM 4.15-1 |
| Tribal Cultural Resources (Project and Cumulative) | MM 4.5-1 and MM 4.5-2 |
| Utilities and Service Systems (Project and Cumulative) | MM 4.10-1 and MM 4.17-1 |
| Wildfires (Project) | MM 4.7-4 and MM 4.14-1 |

# 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/EA.

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/EA has considered the potential cumulative effects of the project along with other current and reasonably foreseeable projects. Impacts for the following have been found to be cumulatively considerable:

- Aesthetics (Cumulative)
- Air Quality (Project and Cumulative)
- Biological Resources (Cumulative)
- Wildfire (Cumulative)

**Table 1-4**, *Summary of Significant and Unavoidable Project-Level and Cumulative Impacts of the Solar Facility*, presents those impacts at the project -level and cumulatively. Sections 4.1, 4.3, and 4.4 of this EIR/EA present detailed analyses of these impacts and describe the means by which the mitigation measures listed in Table 1-4, would reduce the severity of impacts to the extent feasible.

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

| Resources | Project Impacts | Cumulative Impacts |
|---|---|---|
| Aesthetics | There would be no significant and unavoidable project impacts. | The project would have cumulatively significant and unavoidable aesthetic impacts after implementation of mitigation. Although the proposed project would result in less than significant impacts related to visual character and quality of its surroundings, the project would impact views from three of six KOPs with regard to added cultural modifications. In combination with other projects, particularly the wind turbines and other solar development that exist near the project site, the proposed project would contribute to added cultural modifications in the project area. The "cultural modifications" rating criterion for visual character and quality is likely to be incrementally increased by each additional energy development project, as this development creates a general disharmony with the still mostly undeveloped desert landscape. Mitigation Measures MM 4.1-1 through MM 4.1-3 would help to further reduce visual impacts associated with the proposed project by limiting vegetation removal, planting native vegetation, reducing the visibility of project features, and ensuring that the site is kept free of debris and trash. The proposed project would also implement Mitigation Measure MM 4.1-4 to reduce aesthetics impacts by requiring project lighting to be directed downward and shielded to provide the illumination needed to achieve safety and security objectives. Additionally, to further reduce glare potential, the project would be required to implement Mitigation Measures MM 4.1-5 and MM 4.1-6, which require the use of non-reflective and non-glare materials when feasible. While other projects in the region would be required to implement similar mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. Thus, the project's contribution to cumulative impacts associated with aesthetics would be **significant and unavoidable**. |

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

| Resources | Project Impacts | Cumulative Impacts |
|---|---|---|
| Air Quality | The project would cause temporary unmitigated emissions during construction that would exceed the Easter Kern Air Pollution Control District's (EKAPCD's) thresholds for $PM_{10}$. Implementation of Mitigation Measures MM 4.3-1 and 4.3-2 would reduce impacts by implementing measures such as ensuring fugitive dust is reduced during construction, requiring a Phased Grading Plan, and ensuring that air quality control measures are implemented. However, even with implementation of feasible mitigation measures, short term impacts would remain significant and unavoidable. Long-term operational impacts are expected to remain below established thresholds for criteria pollutants. Therefore, temporary construction impacts are considered **significant and unavoidable**, while operational impacts are considered **less than significant**. In addition, as it relates to the project's impact on sensitive receptors, with implementation of MM 4.3-1 and MM 4.3-4, impacts would be reduced to **less than significant levels**. | There are several alternative energy (wind and solar) projects that are currently undergoing the environmental review process. Several of these projects have the potential to exceed regulatory thresholds. The project, in combination with other planned projects within the region would result in temporary impacts due to construction of the project in conjunction with the related past, present, or reasonably foreseeable probable future projects. These impacts would be considered to be less than significant for all criteria pollutants except $PM_{10}$. Despite implementation of Mitigation Measures MM 4.3-1 and 4.3-2, construction of the project when considered with other projects in the County, would contribute to $PM_{10}$ emissions which exceed EKACPD's thresholds and, thus, would be cumulatively **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 other past, present, and probable future projects in the Antelope Valley, the project would have an incremental contribution to a cumulative loss of foraging and nesting habitat for other special-status species, even with the implementation of project-specific mitigation measures. This loss of 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.<br><br>In addition, while the residual effects on migratory birds of the project were determined to be less than significant, in combination with other past, present, and reasonably foreseeable projects. Therefore, the proposed project, in combination with all identified cumulative projects, would result in a **significant and unavoidable** cumulative impact. |

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

| Resources | Project Impacts | Cumulative Impacts |
|---|---|---|
| Wildfires | There would be no significant and unavoidable project impacts. | Despite implementation of mitigation, 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. |

# 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. Irreversible commitments of resources should be evaluated to ensure that such consumption is justified.

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

# 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. The on-site construction workforce for the project is expected to peak at 200 individuals, however, the average daily workforce is expected to be 100 individuals onsite during construction. There is no on-site operational workforce for the project. 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 Inyokern, Ridgecrest or other 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 include a battery storage and would supply energy to accommodate and support existing demand and projected growth, but it would not foster any new growth. The battery would provide approximately 40 MW of electrical storage but 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.

# 1.8 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/EA.

## Alternatives Eliminated from Further Consideration

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), biological resources (cumulative), hydrology and water quality (project and cumulative), noise (project), and utilities and service systems (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/EA 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, power 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, including carbon dioxide (GHG) after installation; and
- 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. It would require 15 to 20 wind turbines to produce an equivalent 44 MW of power that the project would produce, therefore this 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 proponent's objectives are to develop a solar project that will help meet the increasing demand for clean, renewable electrical power, as well as help California meet its statutory and regulatory goals of generating more renewable power with minimum potential for environmental effects by using proven and established PV technology that is efficient, requires low maintenance and is recyclable. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would substantially increase the significant aesthetic impacts associated with the project because wind turbines would be much taller than solar panels and more visible from many viewpoints;
- It would require a greater overall project footprint that would result in increased disturbance;
- It may result in additional/greater biological resources impacts than the project; and
- 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 44 MW) in Kern County. Fossil fuel-powered plants are designed on a large scale for continuous operation.

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

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

- It would result in additional/greater impacts than the proposed project (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; and
- It would not contribute to the statewide renewable energy and GHG reduction objectives as this alternative would use non-renewable energy to produce electricity.

## Alternative Site

This alternative would involve the development of the proposed project on another site located within Kern County, other than constructing rooftop distributed generation systems. Although undetermined at this time, the alternative project site would likely be located in the Antelope Valley desert region of the County. This alternative is assumed to involve construction of a 383 acre, 44 MW PV solar facility within an 890.5 acres total parcel area. 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 proposed project.

The Antelope Valley has attracted renewable energy development applications that are being proposed for vacant land or land with a history of agricultural uses, and access to regional transmission lines. The availability of alternative sites is constrained by the renewable energy market itself. While other sites with similar size, configuration, and use history may exist in the 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, wildfire, and biological resources. This is based on the known general conditions in the area and the magnitude of the proposed project.

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

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

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

**TABLE 1-5: SUMMARY OF DEVELOPMENT ALTERNATIVES**

| Alternative | Description | Basis for Selection and Summary of Analysis |
|---|---|---|
| Project | Construction and operation of a solar facility on approximately 383 acres would generate up to 44 MW of electricity with battery storage and deliver it to the grid. Approval of Conditional Use Permit (CUP) for construction and operation of commercial solar electrical generating facilities would be required. | N/A |
| Alternative 1: No Project Alternative | No development would occur on the project site. The project site would remain unchanged. | • Required by CEQA<br>• Avoids need for CUP<br>• Avoids all significant and unavoidable impacts<br>• Greater impacts to GHGs<br>• Less impact in all remaining environmental issue areas<br>• Does not meet any of the project objectives. |

**TABLE 1-5: SUMMARY OF DEVELOPMENT ALTERNATIVES**

| Alternative | Description | Basis for Selection and Summary of Analysis |
|---|---|---|
| Alternative 2: General Plan and Zoning Build-Out Alternative | Project site would be developed to the maximum intensity allowed under the Kern County General Plan land use designations and zoning classifications and other existing applicable restrictions. | • Avoids need for CUP<br>• Similar impacts to biological resources, mineral resources, and tribal cultural resources<br>• Less impact to aesthetics, agricultural and forestry resources, hazards and hazardous materials, and land use and planning<br>• Greater overall impacts in all remaining environmental issue areas<br>• Does not meet any of the project objectives. |
| Alternative 3: Reduced Acreage Alternative | Construction and operation of one solar facility on approximately 378.6 acres and would avoid an area of the project site that contains California Juniper Woodland. This alternative is still expected to contain enough land to construct a solar array field capable of generating 44 MW, which is the same generation output estimated for the proposed project. The project site would require a CUP approval. | • Similar impacts to energy, GHG emissions, hazards and hazardous materials, land use and planning, mineral resources, public services, transportation, tribal cultural resources, and utilities and service systems<br>• Less impact in all remaining environmental issue areas<br>• Meets all of the project objectives |
| Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only | The construction of 44 MW of PV solar distributed on rooftops throughout the Antelope Valley. Electricity generated would be for onsite use only. | • Avoids need for CUP at the project site but may require other entitlements (such as a CUP or variance) on other sites<br>• Avoid significant and unavoidable impacts associated with aesthetics, air quality, biological resources, and wildfire<br>• Greater impacts to GHG emissions land use and planning, and noise<br>• Similar impacts to cultural resources, energy, mineral resources, and tribal cultural resources<br>• Less impact in all remaining issue areas<br>• Does not meet the project objectives, nor does this alternative account for the battery storage component of the project. |

**TABLE 1-6: COMPARISON OF ALTERNATIVES**

| Environmental Resource | Proposed 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 (cumulative only) | Less (NI) | Less (SU) | Less (SU) | Less (LTS) |
| Agricultural and Forestry Resources | Less than significant | Less (NI) | Less (LTS) | Less (LTS) | Less (NI) |
| Air Quality | Significant and unavoidable (project and cumulative) | Less (NI) | Greater (SU) | Less (SU) | Less (LTS) |
| Biological Resources | Significant and unavoidable (cumulative only) | Less (NI) | Similar (SU) | Less (SU) | Less (LTS) |
| Cultural Resources | Less than significant with mitigation | Less (NI) | Greater (LTS) | Less (LTS) | Less (LTS) |
| Energy | Less than significant with mitigation | Less (NI) | Greater (LTS) | Similar (LTS) | Similar (LTS) |
| Geology and Soils | Less than significant with mitigation | Less (NI) | Greater (LTS) | Less (LTS) | Less (LTS) |
| Greenhouse Gas Emissions | Less than significant | Greater (LTS) | Greater (LTS) | Similar (LTS) | Greater (LTS) |
| Hazards and Hazardous Materials | Less than significant with mitigation | Less (NI) | Similar (LTS) | Similar (LTS) | Less (LTS) |
| Hydrology and Water Quality | Less than significant with mitigation | Less (NI) | Greater (LTS) | Less (LTS) | Less (LTS) |
| Land Use and Planning | Less than significant with mitigation | Less (NI) | Less (NI) | Similar (LTS) | Greater (LTS) |
| Mineral Resources | Less than significant | Less (NI) | Similar (LTS) | Similar (NI) | Similar (NI) |
| Noise | Less than significant | Less (NI) | Greater (LTS) | Less (LTS) | Greater (SU) |

**TABLE 1-6: COMPARISON OF ALTERNATIVES**

| Environmental Resource | Proposed 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 |
|---|---|---|---|---|---|
| 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) | Similar (LTS) | Less (LTS) |
| Tribal Cultural Resources | Less than significant with mitigation | Less (NI) | Similar (LTS) | Similar (LTS) | Less (NI) |
| Utilities and Service Systems | Less than significant with mitigation | Less (NI) | Greater (LTS) | Similar (LTS) | Less (LTS) |
| Wildfires | Significant and Unavoidable (cumulative) | Less (NI) | Greater (SU) | Less (SU) | Less (SU) |
| Meet Project Objectives? | All | None | Partially | All | Partially |
| Reduce Significant and Unavoidable Impacts? | N/A | All | None | 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 proposed project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the (up to) 44 MW PV solar facility on the 383-acre site would not occur. The No Project Alternative would not require a Conditional Use Permit (CUP) for construction and operation of a 44 MW solar, project battery energy storage, and associated facilities. 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 and Zoning Build-Out Alternative

Alternative 2, the General 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 designations and zoning classifications. The project site has a General Plan designation of 1.1 (State or Federal Land); 8.3 (Extensive Agriculture, 20-acre minimum); 8.5 (Resource Management, 20-acre minimum); and 8.3/2.1 (Extensive Agriculture/Seismic Hazard, 20-acre minimum/Seismic Hazard Combining Area). Additionally, the project site is located within the A WE (Exclusive Agriculture, Wind Energy); A GH (Exclusive Agriculture, Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); A (Exclusive Agriculture); and OS (Open Space) Zone Districts.

Implementation of Alternative 2 would consist of developing the project site under the current land use classifications of 1.1 (State or Federal Land); 8.3 (Extensive Agriculture, 20-acre minimum); 8.5 (Resource Management, 20-acre minimum); and 8.3/2.1 (Extensive Agriculture/Seismic Hazard, 20-acre minimum / Seismic Hazard Combining Area). According to the Kern County General Plan, the 1.1 (State or Federal Land) land use designation applies to all property under the ownership and control of the various state and federal agencies operating in Kern County (including, but not limited to, military, U.S. Forest Service, Bureau of Land Management (BLM), and U.S. Department of Energy). The 1.1 (State or Federal Land) land use designation on-site is federal land administered by the BLM. This area of the project site is located on a Development Focus Area as designated by the Desert Renewable Energy Conservation Area Plan (DRECP). Further details about the DRECP are provided in Section 11.4 (see Chapter 11, *Environmental Assessment*, of this EIR/EA). The 8.3 (Extensive Agriculture, 20-acre minimum) land use designation applies to agricultural uses involving large amounts of land with relatively low value per acre yields. Typical uses include livestock grazing, farming and woodlands. The minimum allowable parcel size in the 8.3 (Extensive Agriculture, 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 acres gross. 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 acres gross. The 8.3/2.1 (Extensive Agriculture/Seismic Hazard, 20-acre minimum/Seismic Hazard Combining Area) land use designation applies to Alquist-Priolo Special Study Zones and other recently active fault zones.

Given that the zoning designation for the project site is A WE (Exclusive Agriculture, Wind Energy); A GH (Exclusive Agriculture, Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); A (Exclusive Agriculture); and OS (Open Space) Zone Districts, the project site could be developed with agricultural uses and other activities compatible with agricultural uses. In addition, according to the DRECP, Development Focus Areas are available for solar, wind, and/or geothermal development. Agricultural uses are not permitted in Development Focus Areas. As such, solar facilities could be developed on the BLM-controlled land under this alternative. Therefore, this alternative assumes agricultural development on those areas of the project site with a land use designation of 8.3, 8.5, and 8.3/2.1 (totaling 150 acres) and solar development on those areas of the project site with a land use classification of 1.1 (totaling 233 acres). No CUPs for solar facility construction and operation would be required for this alternative. This alternative does not meet project objectives due to land constraints.

## Alternative 3: Reduced Project Alternative

Alternative 3, the Reduced Acreage Alternative, would avoid an area of the project site that contains California Juniper Woodland. This area is located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres (see **Figure 6-1**). All project facilities would remain in the same locations as proposed under the project, including the proposed new 34.5 kV collector line, which would still be constructed on private land between the project site and the Manzana Project substation and the energy would be transferred to the SCE Whirlwind Substation using the existing Manzana Project 220 kV gen-tie line. The reduced project acreage under this alternative is still expected to contain enough land to construct a solar array field capable of generating 44 MW, which is the same generation output estimated for the proposed project. Similar to the proposed project, this alternative would require the approval of CUP No. 7, Map 216, for construction and operation of a commercial solar electrical generating facility.

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

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative, would involve the development of a number of geographically distributed small to medium solar PV systems (100 kWh to 1 MW) within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the 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 383 acres of total rooftop area) may be required to attain project's capacity of 44 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 44 MW of electricity, but it would be for on-site use only. This alternative assumes that rooftop development would occur primarily on commercial and industrial structures due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be

consumed on-site by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities. Because energy generated under this alternative would be used on-site, it would not meet the project's objectives of connecting to the regional grid, or contributing to California's RPS goals.

**Table 6-1**, *Summary of Development Alternatives*, provides a summary of the relative impacts and feasibility of each alternative.

## 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 *Guideline*s 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 and biological resources. Impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology. This alternative would also result in greater impacts to land use as it would require extensive discretionary actions, such as design review, CUPs, or zone variances, depending on local jurisdictional requirements and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. In addition, the No Ground-Mounted Utility-Solar Development Alternative would increase result in a significant and unavoidable impact as it relates to construction noise. However, this alternative would result in less impact to aesthetics, agricultural and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, public services, transportation, tribal cultural resources, and utilities and service systems. Thus, for most environmental issue areas, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the proposed project.

It is important to note that it is considered to be impracticable and infeasible to construct the No Ground-Mounted Utility-Solar Development Alternative within the same timeframe and/or with the same efficiency as the proposed project because the project proponent lacks control and access to the sites required to develop 44 MW of distributed solar generated electricity. In addition, this alternative would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Nonetheless, because this alternative reduces impacts to a greater degree than the General Plan and Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

# 1.9 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:

- Impacts related to aesthetics (glare);
- Impacts to air quality;
- Impacts to biological resources;
- Impacts to hydrology and water quality;
- Impacts related to traffic;
- Impacts to utilities and service systems (water supplies).

# 1.10 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.

# 1.11 Summary of Environmental Impacts and Mitigation Measures

**Table 1-7** 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/EA. Refer to the appropriate EIR/EA section for additional information.

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **4.1 Aesthetics** | | | |
| **Impact 4.1-1:** The project would have a substantial adverse effect on a scenic vista. | Less than significant | No mitigation measures are required. | Less than significant |
| **Impact 4.1-2:** The project would substantially degrade the existing visual character or quality of the site and its surroundings in a non-urbanized area. | Less than significant | **MM 4.1-1:** Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program shall be submitted to the Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM). The program shall include, but not be limited to the following:<br>1. 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.<br>2. 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 and BLM.<br>3. 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.<br>4. Trash and food items shall be contained in closed secured containers at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | **MM 4.1-2:** Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall provide evidence for the following:<br>The project proponent/operator shall identify and submit a proposed color scheme and treatment plan 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. The submitted color scheme and treatment plan shall be reviewed and approved by the Planning Director and the Bureau of Land Management (BLM) and the project shall continually comply with the approved plan. | |
| | | **MM 4.1-3:** Wherever possible, within the proposed project boundary the natural vegetation shall remain undisturbed. Where disturbance of natural vegetation is necessary that disturbance shall occur in the manner that results in the greatest retention of root balls and native topsoil with mowing being the preferred and primary method of clearing. All natural vegetation adjacent to the proposed project boundary shall remain in place. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM) for review and approval. The plan shall include the measures detailed below.<br>1. 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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 2. The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, and a clear prohibition of the use of toxic rodenticides.<br>3. 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 and BLM 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).<br>4. Vegetation/ground cover shall be continuously maintained on the site by the project operator.<br>5. 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 and BLM for the three-year period. Should efforts to revegetate soil prove in the second year to not be successful, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department and BLM 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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.1:** Cumulative Impacts | Significant and unavoidable | Implement Mitigation Measures MM 4.1-1 through MM 4.1-3, and:<br>**MM 4.1-4.** Prior to final activation of the solar facility, the project proponent shall demonstrate to County Staff and the Bureau of Land Management (BLM) 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.<br>**MM 4.1-5:** Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM).<br>**MM 4.1-6:** Prior to final activation of the solar facility, the project operator shall demonstrate that all on-site buildings utilized nonreflective materials, as approved by the Kern County Planning and Natural Resources and Bureau of Land Management (BLM). | Significant and unavoidable |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **4.2 Agriculture and Forestry Resources** | | | |
| **Impact 4.2-1:** The project would involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to nonagricultural use of conversion of forest land to non-forest use. | Less than significant | No mitigation measures are required. | Less than significant |
| **Impact 4.2:** Cumulative Impacts | Less than significant | No mitigation measures are required. | Less than significant |
| **4.3 Air Quality** | | | |
| **Impact 4.3-1:** The project would conflict with or obstruct implementation of the applicable air quality plan. | Potentially significant | **MM 4.3-1:** **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 and the Bureau of Land Management (BLM):<br>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.<br>b) All equipment shall be maintained in accordance with the manufacturer's specifications.<br>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. | Significant and Unavoidable (construction) |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 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.<br>e) Electric equipment shall be used to the extent feasible in lieu of diesel or gasoline-powered equipment.<br>f) All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order.<br>g) On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines.<br>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.<br>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 and the Bureau of Land Management (BLM). The plan shall include all EKAPCD-recommended measures, including but not limited to, the following:<br>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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 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.<br>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.<br>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.<br>e) The amount of the disturbed area (e.g., grading, excavation) shall be reduced and/or phased where possible.<br>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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 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.<br>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.<br>i) All active and inactive disturbed surface areas shall be compacted, where feasible.<br>j) Equipment and vehicle access to disturbed areas shall be limited to only those vehicles necessary to complete the construction activities.<br>k) Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil-disturbing activities.<br>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.<br>m) Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust.<br>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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 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.<br>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.<br>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.<br>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.<br>s) Portable equipment, 50 horsepower or greater, used during construction activities (e.g., portable generators) shall require California statewide portable equipment registration (issued by CARB) or an EKAPCD permit.<br>t) The Fugitive Dust Control Plan shall identify a designated person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures, as necessary, to minimize the transport of dust off site and to ensure compliance with identified fugitive dust control measures. Contact information for a hotline shall be posted on site should any complaints or concerns be received during working hours and holidays and weekend periods when work may not be in progress. The names and telephone numbers of such persons | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | shall be provided to the EKAPCD Compliance Division prior to the start of any grading or earthwork.<br>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.<br>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. | Potentially significant | **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:<br>1. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations.<br>2. 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.<br>3. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 4. 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.<br>5. All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system.<br>6. 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 and BLM within 5 days of the training session.<br>7. 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.<br>8. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health–approved respirators shall be provided to onsite personal, upon request. Evidence of training shall be provided to the Kern County Planning and the Bureau of Land Management (BLM). | |
| | | **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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.3-3:** The construction and operation of the project would result in a cumulatively considerable net increase of any criteria pollutant for which the projects' region is nonattainment under applicable federal or state ambient air quality standards. | Potentially Significant | Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4, noted above, would be required. | Short-term impacts would be temporarily significant and unavoidable.<br>Operational impacts would be less than significant. |
| **Impact 4.3:** Cumulative Impacts | Potentially significant | Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4 are required. | Short-term impacts would be temporarily significant and unavoidable.<br>Operational impacts would be less than significant. |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | | Level of Significance After Mitigation |
|---|---|---|---|---|
| **4.4 Biological Resources** | | | | |
| **Impact 4.4-1:** The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. | Potentially significant | **MM 4.4-1:** | Prior to the issuance of grading or building permits 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 proposed project. The following measures pertain to qualified biologists on site:<br>1. 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.<br>2. 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.<br>3. 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.<br>4. Contact information for the qualified biologist(s) shall be submitted to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM).<br>5. 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. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | **MM 4.4-2:** If during grading, construction, and decommissioning, an authorized biologist determines the presence of Robbins' nemacladus, short-bracted bird's-beak, Mt. Pinos larkspur, Latimer's woodland-gilia, Lemmon's syntrichopappus, Mojave spineflower, Clokey's cryptantha, and/or Tejon poppy onsite:<br>1. Sturdy, highly visible, orange plastic construction fencing (or equivalent material verified by the authorized biologist) shall be installed around all locations of detected special-status plants to protect from impacts during the construction phase, until they can be relocated. The fence shall be securely staked and installed in a durable manner that would be reasonably expected to withstand wind and weather events and last at least through the construction period. Fencing shall be removed upon completion of the project construction.<br>2. If any plants which are either listed as DRECP focus species or Bureau of Land Management (BLM) special status species are found on the project area, a setback of 0.25 mile from project infrastructure will be implemented. With BLM approval, a lesser setback may be implemented.<br>3. Any Robbins' nemacladus, short-bracted bird's-beak, Mt. Pinos larkspur, Latimer's woodland-gilia, Lemmon's syntrichopappus, Mojave spineflower, Clokey's cryptantha, and/or Tejon poppy onsite populations that cannot feasibly be avoided in final project design shall have seed collected prior to construction for sowing into suitable onsite habitat or in nearby suitable offsite habitat covered with a conservation easement. A seed harvesting and storage plan including a planting plan shall be prepared and approved by the County and BLM, prior to ground disturbance of these areas. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | **MM 4.4-3:** Prior to the issuance of a grading permit, the project proponent/operator shall develop a Joshua Tree Impact Plan. The Plan shall be prepared by a qualified biologist pre-approved by the County and shall be approved by the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM) prior to implementation. At a minimum, the plan shall include the following:<br>1. Indicate how reasonable efforts will be made to avoid Joshua trees within project site. All Joshua trees not designated for removal and Joshua trees present immediately adjacent to construction work areas shall be protected through clear delineation and marking of construction work areas.<br>2. Indicate the number of trees that would be impacted, including a discussion of Joshua tree population age, health, and number of Joshua trees that could be relocated within suitable adjacent areas.<br>3. Methods shall be specified for avoiding specific Joshua trees and suitable candidates for translocation identified. Detail methods of relocation efforts including the preservation of the tree root ball, how it will be removed (preferably a tree spade). Success of relocated trees shall be a minimum of 90 percent after three years. The Plan shall identify the appropriate time of year for transplanting Joshua trees, and shall consider the plant's original and transplanted physical orientation, prevailing wind direction, soil type of the original and transplanted locations, and other related attributes which may affect the successful transplantation of the Joshua trees. In-lieu fee monetary funding may be applied for any tree not meeting the 90 percent success rate.<br>4. Detail of a three-year maintenance program for any planned relocated Joshua trees on the site, such as weed maintenance, supplemental irrigation, and support stakes. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 5. Post-Monitoring of all translocated Joshua trees, if any, shall be required for a minimum of three-years following relocation to verify the trees have adapted and are in good health. The Plan shall identify contingency measures if a tree or group of trees die, such as replanting and continued monitoring, or an in-lieu payment.<br>6. The plan shall specify that a qualified biologist or biological monitor shall monitor construction and all Joshua trees removed or damaged. A monitoring report shall be submitted to the Kern County Planning and Natural Resource Department and BLM to document the condition of the Joshua trees annually for three-years if any Joshua trees are relocated. | |
| | | **MM 4.4-4:** Prior to issuance of grading permits, and in lieu of relocation of Joshua Trees to be impacted by the project on private land, as described above in MM 4.4-3:<br>1. The project proponent/operator may mitigate all or part of the project's impacts to Joshua trees by funding the acquisition and management in perpetuity of Joshua tree woodland, or habitats similar to those that contain impacted Joshua trees on site that are located within the same bioregion and/or watershed, as approved by the County.<br>2. Funding and management shall be provided through a County approved Conservation Plan, either through an existing mitigation bank (e.g., as managed by the City of Lancaster Parks, Recreation and Parks Department) or through a third-party entity such as the Wildlife Conservation Board or a regional Land Trust. The in-lieu fee shall provide sufficient funds to acquire appropriate lands to provide habitats containing Joshua trees at a 1:1 ratio for impacted lands. The lands should be comparable to the habitat to being impacted by the project based on similar abundance and size of Joshua trees, similar co-dominant vegetation, suitable soils and hydrology, and similar levels of disturbance or habitat degradation (or lack | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
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| | | thereof). The County-approved biologist shall submit confirmation of the total area and an estimate of the number of individual Joshua trees that will be removed. | |
| | | **MM 4.4-5:** Prior to the issuance of grading or building permits, and for the duration of construction activities, the project proponent shall demonstrate that it has in place a Construction Worker Environmental Awareness Training and Education Program for all new construction workers at the project site, laydown area and/or transmission routes.<br>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. All construction workers shall attend the Program at least within a minimum of one week of initial ground disturbance and one week prior to participating in construction activities and shall attend a refresher Program annually. Therefore, employees will be subject to the following:<br>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.<br>The Program will be developed and presented by the project qualified biologist(s) or designee approved by the qualified biologist(s). The training may be presented in video form. Program shall include the components described below.<br>1. Information on the identification and life history of the burrowing owl, golden eagle, California condor, Swainson's hawk, 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 | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 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. Identification and information regarding regulated native plants such as Joshua tree shall also be provided to construction personnel.<br>2. 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.<br>3. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education Program and signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM).<br>4. A copy of the training transcript, training video or informational binder for specific procedures (including such information as trenching protection for kit fox requirements) shall be kept available for all personnel to review and be familiar with as necessary.<br>5. 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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | **MM 4.4-6:** During construction, operations and maintenance, and decommissioning, the project proponent/operator shall implement the general avoidance and protective measures described below:<br>1. No more than 14 days 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 survey the area, and immediately prior to conducting these activities to ensure that no special-status animals are present. A qualified biologist or biological monitor shall monitor all initial construction and decommissioning ground-disturbance activities. A report of those activities shall be submitted to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM) within 30 days of completion of activities.<br>2. Based on the results of pre-construction surveys, if any evidence of occupation of the project site by listed or other special-status animal species is observed, a no-disturbance buffer shall be established by a qualified biologist that results in sufficient avoidance, as described below. If sufficient avoidance cannot be established or if special-status animal species are found, construction shall cease in the vicinity of the animal, and the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife, as appropriate depending on the species, shall be contacted for further guidance and consultation on additional measures required.<br>3. 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 natural resources (i.e., special-status animal species, jurisdictional drainages, nesting birds, etc.) where possible. Construction-related activities, and decommissioning-related activities, outside of the impact zone shall be avoided. All site plans shall delineate proposed impact | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | areas, including solar fields, generation-tie line, staging area and access routes.<br>4. Access roads that are planned for use during construction or decommissioning 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.<br>5. If exclusion fencing is required by any consulting Resource Agency (i.e. California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service), the project site shall be fenced with a temporary exclusion fence to keep special-status terrestrial wildlife species, including desert tortoise, from entering during construction. This exclusion fencing shall be constructed of silt fence material, metal flashing, plastic sheeting, or other materials that will prohibit wildlife from climbing the fence or burrowing below the fence. The fencing shall be buried approximately 12 inches below the surface and extend a minimum of 30 inches above grade. Fencing shall be installed prior to issuance of grading or building permits and shall be maintained during all phases of construction and decommissioning. The fencing shall be inspected by an authorized biologist approved by the Resource Agencies weekly and immediately after all major rainfall events through the duration of construction and decommissioning activities. Any needed repairs to the fence shall be performed on the day of their discovery. Exclusion fencing shall be removed once construction or decommissioning activities are complete. Outside temporarily fenced exclusion areas, the project proponent/operator shall limit the areas of disturbance. Parking areas, new roads, staging, storage and excavation locations shall be confined to the smallest areas possible. These areas shall be flagged and disturbance activities, vehicles, and equipment shall be confined to these flagged areas. When | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | consultation with the Resource Agency is required, such Resource Agency may impose additional requirements. Along with construction of tortoise exclusionary fencing, excavation of known or potential burrows cannot be accomplished without authorization from CDFW.<br>6. To prevent inadvertent entrapment of desert kit foxes, badgers, or other animals during construction, all excavated, steep-walled holes or trenches (defined as a 45-degree slope or greater) shall be covered with plywood or similar materials at the close of each working day. A small metal mesh material shall be stapled to the edges of the plywood and then secured to the ground using at least 10-inch long rebar or staples every 12 inches along the outer edge of the metal mesh material at the end of each working day and during the day when not actively being worked on/in. Non-covered holes or trenches shall be thoroughly inspected for trapped animals by a qualified biologist or their biological monitor at the beginning and end of each day, including non-work days. Immediately before such holes or trenches are filled, they shall again be thoroughly inspected by trained staff approved by the retained qualified biologist for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a listed species is trapped, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife, as appropriate for the species, BLM and Kern County Planning and Natural Resources Department shall be contacted immediately. A hand-written log shall be prepared of the daily inspections during all activity requiring the trenching protection referenced above, and records from that log shall be furnished to the Kern County Planning and Natural Resources Department and BLM upon request. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 7. Burrowing owls, mammals, and nesting birds can use construction pipes, culverts, or similar structures for refuge or nesting. All construction pipes, culverts, or similar structures with a diameter of 12 inches or less that have not been stored on the project overnight shall be thoroughly inspected for special-status wildlife or nesting birds before moving, burying, or otherwise using such pipe. All construction pipes, culverts, or similar structures with a diameter of 12 inches or less shall be capped prior to storing such materials at a construction site for one or more overnight periods. All construction pipes, culverts, or similar structures with a diameter of 12 inches or less that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved or disturbed in any way until a qualified biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by a qualified biologist holding the appropriate handling permits from the Resource Agencies. No one shall be allowed to touch a listed species without authorization from the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife. All necessary authorization permits shall be obtained from the appropriate resource agencies, and copies of all such final authorization permits shall be submitted to the Kern County Planning and Natural Resources Department and BLM. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 8. 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, or relocated by a qualified biologist holding the appropriate handling permits from the Resource Agencies. No one shall be allowed to touch a listed species without authorization from the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife.<br>9. 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.<br>10. A speed limit of 10 miles per hour shall be enforced within the limits of the proposed project.<br>11. 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 (SWPP) or Soil Erosion and Sedimentation Control Plan (SESCP) (see Section 4.7, *Geology and Soils*, for more details on SESCP requirements). All detected erosion shall be remedied within 2 days of discovery or as described in the SWPP or SESCP. 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.<br>12. Fueling of equipment shall take place within existing roads No refueling within or adjacent to drainages or native desert habitats (within 150 feet) shall be permitted. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary.<br>13. Prior to any clearing and ground disturbing activities, the project proponent/operator shall submit a Maintenance, Trash Abatement, and Pest Management Program to the Kern County Planning and Natural Resources Department and BLM for | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | review and approval. The program shall include, but not be limited to the following:<br>a) 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.<br>b) 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.<br>c) 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 and BLM.<br>d) 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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | i. The following stipulation shall be included: All vegetation, debris or any other natural material collected as part of mowing, clearing or preparing the site for construction shall be removed the same day of such activities. Stockpiling is permitted for a period which shall not exceed ten (10) consecutive hours.<br>14. Workers shall be prohibited from bringing pets and firearms to the project site and from feeding wildlife.<br>15. Intentional killing or collection of any plant or wildlife species shall be prohibited.<br>16. Perimeter fencing during operations shall be made wildlife friendly by raising the bottom up 7 inches from the ground and knuckling back the bottom edge to allow movement of desert kit foxes and desert tortoises.<br>17. Prior to use of pesticides, the project proponent shall consult with CDFW and USFWS regarding the necessary authorization permits from those agencies. All necessary authorization permits shall be obtained from those agencies, and copies of all such final authorization permits shall be submitted to the Kern County Planning and Natural Resources Department and BLM. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | **MM 4.4-7:** To protect special status animal species from disturbance during construction, 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 animal species wanders into the project site. In addition, a preconstruction survey of special status animal species shall be completed. Methodology for preconstruction surveys shall be appropriate for each potentially occurring special-status animal species including, American badger, desert kit fox, burrowing owl, Swainson's hawk, and migratory birds, and shall follow U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife preconstruction survey guidelines available. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site being disturbed. If any evidence of occupation of the project site special-status species is observed, a buffer shall be established by a qualified biologist that results in sufficient avoidance, as described below:<br>1. Preconstruction surveys shall be conducted by qualified biologists for the presences of American badger or Desert kit fox dens within 14 days prior to commencement of construction and decommissioning activities. The surveys shall be conducted for the entire area being disturbed in phases.<br>2. If active dens are observed and avoidance of den disturbance is feasible, the following buffers are required during construction activities;<br>a. American badger active den: 30 feet<br>b. Desert kit fox active den: 100 feet (or 200 feet if during the breeding season, as required below).<br>3. If potential kit fox dens are observed, the following measures are required to avoid potential adverse effects to kit fox; | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | a. If the qualified biologist determines that the potential dens may be active during the breeding season (December 1 through June 30), the biologist shall implement a 200-foot avoidance buffer and shall notify California Department of Fish and Wildlife, California State Lands Commission, the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM). No destruction of active dens is to occur during the breeding season.<br>b. If an active kit fox den is discovered with the potential to be occupied by a desert kit fox during the non-breeding season (July 1 through November 31), the den openings shall be avoided by at least 100 feet.<br>c. If an active kit fox den cannot be avoided during the non-breeding season, entrances to the dens shall be monitored for at least 5 consecutive days using infra-red cameras. The den entrance can be blocked with soil, sticks, and debris during those 5 days to discourage use of these dens prior to proposed project disturbance. The den entrances shall be blocked to an incrementally greater degree over the 5-day period. After the qualified biologist determines that kit fox have stopped using active dens within the proposed project boundary, the dens shall be immediately had-excavated with a shovel, filled and compacted to prevent re-use during construction.<br>d. A qualified biologist shall be onsite each day that will result in new ground disturbance (initial activity and any lapse in activity for 14 days or more) and during ground disturbing operation and maintenance activities to ensure the buffers are maintained and that kit fox are not being impacted. A qualified biologist shall remain on call throughout construction and decommissioning in the event a desert kit fox wanders onto the site. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | e. Perimeter fencing during operations shall be made wildlife friendly by raising the bottom up 7 inches from the ground with the bottom edge knuckled back to allow movement of desert kit foxes and desert tortoises.<br>f. If the qualified biologist determines that potential dens are inactive, the dens that cannot be avoided shall be excavated by hand under the direct supervision of a qualified biologist with a shovel, filled and compacted to prevent desert kit fox from reusing them during construction. Identified inactive dens will be confirmed inactive by monitoring of the burrow with cameras and track plates for 5 consecutive days to confirm no usage. | |
| | | **MM 4.4-8:** The project proponent/operator shall implement the following measures, based on the 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 and decommissioning activities will be avoided and minimized to less than significant levels: The survey(s) shall occur no more than 14 days prior to ground-disturbing activities (i.e., exploratory geotechnical drilling, vegetation clearance, grading, etc.), including start or re-start of construction or decommissioning activities, as applicable. The survey(s) need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site being disturbed. The survey methodology 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. A biologist shall prepare a preconstruction survey report that shall be submitted to CDFW, the Kern County Planning and Natural Resources Department, and Bureau of Land Management (BLM). | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 1. A qualified biologist shall conduct an additional pre-construction survey of all impact areas within 24-hours of start or restart (as the case may be) of ground disturbing activities associated with construction or decommissioning activities to identify any additional burrowing owls or burrows necessitating avoidance, minimization, or mitigation measures.<br>If active burrowing owl burrows are detected on site, they shall be protected in place through the use of visual screens or through CDFW-identified restricted activity dates and setback distances (presented in Table 4.4-3, Burrowing Owl Burrow Restricted Activity Dates and Setback Distances, below), or other measures as described in the 2012 CDFW Staff Report and/or approved by CDFW for the project to minimize disturbance impacts unless otherwise authorized by CDFW. Burrowing owls shall not be moved or excluded from burrows during the breeding season. | |

**TABLE 4.4-3: BURROWING OWL RESTRICTED ACTIVITY DATES AND SETBACK DISTANCES**

| | Level of Disturbance (meters) | | |
|---|---|---|---|
| **Time of Year** | **Low** | **Medium** | **High** |
| April 1 – August 15 | 200 | 500 | 500 |
| August 16 – October 15 | 200 | 200 | 500 |
| October 16 – March 31 | 50 | 100 | 500 |

SOURCE: CDFW 2012.

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 2. If avoidance of active burrows is infeasible, the owls can be passively displaced from their burrows according to recommendations made in the 2012 CDFW Staff Report on Burrowing Owl Mitigation, or alternative methods approved CDFW. Burrowing owls shall not be excluded from burrows according to the following requirements, or alternative methods approved by CDFW:<br>a. Occupied burrows shall not be disturbed during the nesting season generally defined as February 1 through August 31.<br>b. Before excluding owls during the non-nesting season, generally defined as September 1 through January 31, a qualified biologist meeting the Biologist Qualifications set forth in the 2012 CDFW Staff Report, shall verify through noninvasive methods through visual observations, followed by use of a burrow scope that either: (1) the owls have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Burrowing owls shall not be moved or excluded from burrows during the breeding season.<br>c. A Burrowing Owl Exclusion Plan is developed and approved by the applicable local CDFW office and submitted to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM). The plan shall include, at a minimum:<br>i. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;<br>ii. Type of scope and appropriate timing of scoping to avoid impacts; | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | iii. Occupancy factors to look for and what will guide determination of vacancy and excavation timing, one-way doors shall be left in place a minimum of 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily, and monitored for evidence that owls are inside and can't escape (i.e., look for sign immediately inside the door);<br>iv. How the burrow(s) will be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that owls do not reside in the burrow);<br>v. Removal of other potential owl burrow surrogates or refugia on site;<br>vi. Photographing the excavation and closure of the burrow to demonstrate success and sufficiency;<br>vii. How the impacted site will continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete.<br>d. Permanent loss of occupied burrow(s) and habitat is mitigated in accordance with the measures described below.<br>e. Temporary exclusion is mitigated in accordance with the measures described below.<br>f. Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows sufficient to ensure take is avoided. Conduct daily monitoring for 1 week to confirm young of the year have fledged if the exclusion will occur immediately after the end of the breeding season. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | g. In accordance with the Burrowing Owl Exclusion Plan, a qualified wildlife biologist shall excavate burrows using hand tools. Sections of flexible plastic pipe or burlap bag shall be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow. One-way doors shall be installed at the entrance to the active burrow and other potentially active burrows within 160 feet of the active burrow and monitored for at least 48 hours after installation. If burrows will not be directly impacted by the project, one-way doors shall be installed to prevent use and shall be removed after ground disturbing activities have concluded in the area. Only burrows that will be directly impacted by the project shall be excavated and filled.<br>h. During construction activities, monthly and final compliance reports shall be provided to the CDFW, Kern County Planning and Natural Resources Department, BLM, and other applicable resources agencies documenting the effectiveness of mitigation measures and the level of burrowing owl take associated with the proposed project.<br>i. If passive relocation is required, compensatory mitigation for lost breeding and/or wintering habitat shall be implemented on- offsite in accordance with Burrowing Owl Staff Report guidance. The following recommendations shall be implemented:<br>i. Temporarily disturbed habitat shall be restored, to pre-project conditions, including decompacting soil and revegetating. If restoration is not feasible, then the project proponent/operator shall consult with the CDFW when determining offsite mitigation acreages, but shall be no less than 160 acres. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | ii. In order to protect habitat, the measures described below shall be implemented.<br>1) Permanently conserve similar vegetation communities (grassland, scrublands, desert, and agriculture [grazing lands]) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non- breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals. Conservation shall occur in areas that support burrowing owl habitat and can be enhanced to support more burrowing owls.<br>2) Permanently protect mitigation land through a conservation easement deeded to a nonprofit conservation organization or public agency with a conservation mission. If the project is located within the service area of a CDFW-approved burrowing owl conservation bank, the project proponent/operator may purchase available burrowing owl conservation bank credits.<br>3) Develop and implement a mitigation land management plan in accordance with Burrowing Owl Staff Report guidelines to address long-term ecological sustainability and maintenance of the site for burrowing owls.<br>4) Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 5) Habitat shall not be altered or destroyed, and burrowing owls shall not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to CDFW-approved management, monitoring and reporting plans (including construction of artificial burrows if necessary), and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed.<br>6) Mitigation lands shall be on, adjacent to, or in proximity to the impact site, where feasible, and where habitat is sufficient to support burrowing owls. | |
| | | **MM 4.4-9**: To mitigate for potential impacts to nesting birds, special-status birds, and birds protected under the Migratory Bird Treaty Act and California Fish and Game Code during construction and decommissioning activities, the following measures shall be implemented as part of the approval for a grading or building permit.<br>1. During the avian nesting season (February 1 – August 31), a qualified biologist shall conduct a preconstruction avian nesting survey no more than 7 days prior to initial vegetation clearing. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur within 7 days prior to clearing 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 biologist be allowed to handle an active 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 western meadowlark, nests in shrubs that could support nests, and suitable raptor nest sites such as nearby trees and power | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 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.<br>2. If construction is scheduled to occur during the non-nesting season (September 1 through February 1), no preconstruction surveys or additional measures are required for non-listed avian species.<br>3. If construction begins in the non-nesting season and proceeds continuously into the nesting season within any particular construction or decommissioning area, no surveys are required for non-listed avian species so long as all suitable nesting sites have been cleared from active construction/decommissioning areas.<br>4. 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 raptor species' nests (or a suitable distance otherwise determined in consultation with California Department of Fish and Wildlife [CDFW]). Any nest of a federal- or state-listed bird species shall require consultation with the appropriate agency (U.S. Fish and Wildlife Service 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 wildlife biologist has determined that the birds have fledged or the proposed project component(s) have been redesigned to avoid the area. All no-disturbance buffers shall be delineated in the field with visible flagging or fencing material. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | **MM 4.4-10:** 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:<br>1. Identification of all raven nests within the project area during construction;<br>2. Weekly inspection under all nests in the project area for evidence of raven predation on local wildlife (bones, carcasses, etc.), and, if evidence of listed-species predation is noted, submit a report to California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, the Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM) within 5 calendar days;<br>3. Provisions for the management of trash and water that could attract common ravens during the construction and operation phases of the proposed project.<br>4. 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 evidence payment of any required fees shall be submitted to the Kern County Planning and Natural Resources Department and BLM.<br>Implementation of Mitigation Measures MM 4.1-4, MM 4.7-4 and 4.9-2 would be required. (See Section 4.1, *Aesthetics*, 4.7, *Geology and Soils*, and Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text). | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | | Level of Significance After Mitigation |
|---|---|---|---|---|
| **Impact 4.4-2:** The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS. | Potentially significant | **MM 4.4-11:** | The project proponent/operator shall avoid and minimize impacts to scale broom scrub and any other DRECP riparian vegetation type by implementing a 200-foot avoidance buffer. The avoidance buffer can be reduced, but only after receiving approval from the Bureau of Land Management (BLM) that the permitted construction activities can be classified as a minor incursion as defined with the DRECP. Impacts within the 200-foot avoidance buffer will not be permitted without BLM approval. | Less than significant |
| | | **MM 4.4-12:** | 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 by permanent facilities. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board (RWQCB), the County and Bureau of Land Management (BLM). The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:<br>1. Avoidance of potential jurisdictional features (ephemeral drainages). This may be shown in plan form.<br>2. Any material/spoils generated from project activities shall be located away from jurisdictional areas 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.<br>3. Fuel or hazardous materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and be placed generally at least 50 feet from the top of bank.<br>4. Any spillage of fuel or hazardous 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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | **MM 4.4-13:** If potential jurisdictional features cannot be avoided, the project proponent/operator shall be subject to provisions as identified below:<br>1. 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 California Department of Fish and Wildlife (CDFW) on the need for a streambed alteration agreement. Correspondence and copies of reports shall be submitted to the County and Bureau of Land Management (BLM).<br>2. 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.<br>3. Compensatory mitigation for impacts to unvegetated streambeds/washes shall be identified and secured prior to disturbance of the features at a minimum 1:1 ratio, or as approved by the RWQCB or CDFW. Mitigation may be either through onsite or offsite mitigation, or purchasing credits from an approved mitigation bank.<br>4. 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 and BLM.<br>5. A Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared that outlines the compensatory mitigation in coordination with the RWQCB and CDFW. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | a. 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).<br>b. The HMMP shall include remedial measures in the event that performance criteria are not met.<br>c. If mitigation is implemented off site, mitigation lands shall be comprised of similar or higher quality and preferably located in the vicinity of the site or watershed. 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.<br>d. Copies of any coordination, permits, etc., with RWQCB and CDFW shall be provided to the County and BLM.<br>Implementation of Mitigation Measure MM 4.7-4 would be required. (See Section 4.7, *Geology and Soils*, for full mitigation measure text). | |
| **Impact 4.4-3:** The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. | Potentially significant | Implementation of Mitigation Measures MM 4.4-12, MM 4.4-13 and MM 4.7-4 (See Section 4.7, *Geology and Soils*, for full mitigation measure text) would be required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.4-4:** The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. | Potentially significant | Implementation of Mitigation Measure MM 4.1-4 (See Section 4.1, *Aesthetics*, for full mitigation measure text) would be required. | Less than significant |
| **Impact 4.4-5:** The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. | Potentially Significant | Implementation of Mitigation Measures MM 4.4-3 through MM 4.4-5 would be required. | Less than Significant |
| **Impact 4.4-6:** The project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan. | No impact | No mitigation measures are required. | No impact |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.4:** Cumulative Impacts | Significant and unavoidable | Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 as well as MM 4.1-4, MM 4.7-4 and MM 4.9-2 would be required (See Section 4.1, *Aesthetics*, Section 4.7, *Geology and Soils*, and Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text). | 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 *Guidelines* Section 15064.5. | Potentially significant | **MM 4.5-1:** The project proponent/operator shall retain a Lead Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's 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 and Bureau of Land Management (BLM) prior to the commencement of any construction activities on-site. Further, the Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project:<br>1. Prior to commencement of any ground-disturbing activities, the Lead Archaeologist shall conduct 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 to all personnel. A copy of the Cultural Resources Sensitivity Training Guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form. A copy of the proposed training materials shall be provided to the Planning and Natural Resources Department prior to the issuance of any grading or building permit. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 2. The training shall include an overview of potential cultural resources that could be encountered during ground-disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Lead Archaeologist for further evaluation and action, as appropriate, and of the penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.<br>3. The project proponent/operator shall ensure all employees or onsite workers who have not participated in earlier cultural resources sensitivity trainings shall meet the provisions specified above.<br>4. A copy of the Cultural Resources Sensitivity Training Guide/Materials shall be kept on-site and available for all personnel to review and be familiar with as necessary. It is the responsibility of the Lead Archaeologist to ensure all employees receive appropriate training before the work on-site. | |
| | | **MM 4.5-2:** In the event archaeological materials are encountered during any ground disturbing activities, including grading, construction and decommissioning, the project proponent/contractor shall cease any ground-disturbing activities. The services of an archaeological monitor working under the supervision of the Lead Archaeologist shall be retained by the project proponent/operator to monitor on a full-time basis, ground-disturbing activities associated with project-related activities, as follows:<br>1. All ground-disturbing activities within 50 feet of prehistoric archaeological sites shall be monitored. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 2. For all other ground-disturbing activities within the project area, initial excavation or grading activities shall be monitored by archaeological monitors. During the course of this initial monitoring, if the qualified archaeologist can demonstrate that the level of monitoring should be reduced or discontinued, or if the qualified archaeologist can demonstrate a need for continuing monitoring, the qualified archaeologist, in consultation with the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM), may adjust the level of monitoring to circumstances as warranted. The area of the discovery shall be marked off by temporary fencing that encloses a 50-foot radius from the location of discovery or a radius determined by the Lead Archaeologist, as appropriate. Signs shall be posted that establish it as an Environmentally Sensitive Area until the discovery is assessed by the Lead Archaeologist. The Lead Archaeologist 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.<br>3. Per *California Environmental Quality Act (CEQA) Guidelines* Section 15126.4(b)(3), project redesign and preservation in place is the preferred means to avoid impacts to significant historical resources. Consistent with *CEQA Guidelines* Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist shall develop additional treatment measures in consultation with the County, and the BLM if the resource occurs on federally owned land, which may include data recovery or other appropriate measures. The County, and the BLM if applicable, 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 | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | shall be curated at an accredited curation facility. The lead archaeologist, in consultation with a designated Native American representative, as required, 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, to the BLM, and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield.<br>4. The archaeological monitor shall keep daily logs and the Lead Archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the Lead Archaeologist shall prepare a monitoring report detailing the results of monitoring, which shall be submitted to the Kern County Planning and Natural Resources Department, BLM and to the southern San Joaquin Valley Information Center at California State University, Bakersfield. | |
| **Impact 4.5-2:** The project would not cause a substantial adverse change in the significance of an archaeological resource, as defined in CEQA *Guidelines* Section 15064.5. | Potentially significant | Implementation of Mitigation Measures MM 4.5-1 and 4.5-2 would be required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | | Level of Significance After Mitigation |
|---|---|---|---|---|
| **Impact 4.5-3:** The project would not disturb any human remains, including those interred outside of dedicated cemeteries. | Potentially significant | **MM 4.5-3:** | If human remains are uncovered during project construction on non-federally owned land, the project proponent/contractor shall immediately halt work, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.4 (e)(1) of the *California Environmental Quality Act Guidelines*. If the County coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | If human remains are uncovered during project construction on federally owned land, the BLM shall be notified by the project proponent/operator. If it is determined that the remains are Native American, the BLM archaeologist will initiate the proper procedures under the Native American Graves Protection and Repatriation Act (NAGPRA). Reasonable and good faith efforts shall be made by the BLM to identify the appropriate Native American tribes, groups and individuals, or other ethnic groups and individuals related to the burial and consult with them concerning the treatment of the remains. Native American human remains, associated grave goods, or objects of cultural patrimony discovered on federal lands will be treated in accordance with the requirements of NAGPRA. Construction in the area of the find shall not resume until authorization has been given by the BLM. | |
| **Impact 4.5:** Cumulative Impacts | Potentially significant | Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3 is required. | Less than significant |
| **4.6 Energy** | | | |
| **Impact 4.6-1:** The project would result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. | Less than significant | Implementation of Mitigation Measure MM 4.3-1, is required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.6-2:** 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, is required. | Less than significant |
| **4.7 Geology and Soils** | | | |
| **Impact 4.7-1:** The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo earthquake fault zoning map issued by the State Geologist for the area or based on other substantial evidence of a known fault. | Less than Significant | No mitigation measures are required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | | Level of Significance After Mitigation |
|---|---|---|---|---|
| **Impact 4.7-2:** The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. | Potentially significant | **MM 4.7-1:** | Prior to the issuance of building or grading permits for the proposed project, the project proponent/operator shall conduct a final geotechnical study to confirm the findings of the preliminary geotechnical engineering report regarding soil conditions and geologic hazards on the project site and submit for review and approval by the Kern County Department of Public Works and the Bureau of Land Management (BLM).<br>1. The final geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but is not limited to, the following:<br>a. Location of fault traces and potential for surface rupture and groundshaking potential<br>b. Maximum considered earthquake and associated ground acceleration<br>c. Potential for seismically induced, liquefaction, differential settlement, and mudflows<br>d. Stability of any existing or proposed cut-and-fill slopes<br>e. Collapsible or expansive soils<br>f. Foundation material type<br>g. Potential for wind erosion, water erosion, sedimentation, and flooding<br>h. Location and description of unprotected drainage that could be impacted by the proposed development; and<br>i. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground and any seismic hazards. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 2. The project proponent shall determine the final siting of project facilities based on the results of the final geotechnical study and implement its recommended measures. The project proponent/operator shall not locate project facilities on or immediately adjacent to a fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to accurately locate fault trace(s) to avoid siting improvements on, or close to, fault trace(s) and to evaluate the risk of fault rupture. After locating the fault, accurate setback distances can be proposed.<br>3. The project proponent shall evaluate final facility siting design developed prior to the issuance of any building or grading permits shall be made to verify that geological constraints have been avoided. | |
| | | **MM 4.7-2:** Prior to the issuance of grading permits:<br>1. The project proponent shall retain a California registered and licensed engineer to design the project facilities to withstand probable seismically induced ground shaking at the project site. All grading and construction on site shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California-registered and licensed professional engineer.<br>a. The procedures and site conditions shall encompass site preparation, foundation specifications, and protection measures for buried metal structures. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | | Level of Significance After Mitigation |
|---|---|---|---|---|
| | | | b. The final structural design shall be subject to approval by Kern County Public Works and Bureau of Land Management (BLM) and approval and follow-up inspection by the Kern County Building Inspection Department and BLM. Final design requirements shall be provided to the on-site construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the Kern County Planning and Natural Resources Department. | |
| **Impact 4.7-3:** The project would result in substantial soil erosion or the loss of topsoil. | Potentially significant | **MM 4.7-3:** | The project proponent/operator shall minimize grading. Prior to the initiation of construction, the project proponent/operator shall retain a California registered and licensed professional engineer to submit final grading earthwork and foundation plans, incorporating best management practices to limit on-site and off-site erosion to the extent feasible, to the Kern County Public Works Department and the Bureau of Land Management (BLM) for review and approval. | Less than significant |
| | | **MM 4.7-4:** | Prior to grading, construction and demolition activities, the project proponent/operator shall prepare a Soil Erosion and Sedimentation Control Plan to mitigate potential loss of soil and erosion. The plan shall be prepared by a California-registered and licensed civil engineer or other County-approved professional, and submitted to the Kern County Public Works Department and Bureau of Land Management (BLM) for review and approval.<br>1. The Soil Erosion and Sedimentation Control Plan shall include, but is not limited to, the following:<br>a. Best management practices to minimize soil erosion consistent with Kern County grading requirements and the Lahontan Regional Water Quality Control Board requirements pertaining to the preparation of a Stormwater Pollution Prevention Plan (best management practices recommended by the Kern County Public Works Department and the BLM shall be reviewed for applicability). | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | | Level of Significance After Mitigation |
|---|---|---|---|---|
| | | | b. Provisions to maintain flow in washes, should it occur, throughout construction.<br>c. Provisions for site revegetation using native seed mix or allowing for existing vegetation to grow.<br>d. Sediment collection facilities as may be required by the Kern County Public Works Department and the BLM.<br>e. A timetable for full implementation, estimated costs, and a surety bond or other security as approved by the County and the BLM.<br>f. Other measures required by the County and the BLM during permitting, including long-term monitoring (post-construction) of erosion control measures until site stabilization is achieved. | |
| Impact 4.7-4: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. | Potentially significant | **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.<br>1. Prior to the start of any ground-disturbing activities, the qualified paleontologist shall conduct a Paleontological Resources Awareness Training program for all construction personnel working on the project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training Guide shall be submitted to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM). The training guide may be presented in video form.<br>2. Paleontological Resources Awareness Training may be conducted in conjunction with the archaeological resources training required by Mitigation Measure MM 4.5-1 (see Section 4.5, *Cultural Resources*). | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 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.<br>4. The project proponent shall ensure all new employees who have not participated in earlier Cultural Resources Sensitivity Trainings shall:<br>a. Participate in Cultural Resources Sensitivity Training as described above.<br>b. Shall be provided a Cultural Resources Sensitivity Training guide for all personnel that is approved by the lead archaeologist.<br>c. The Cultural Resources Sensitivity Training guide shall be kept available for all personnel to review and be familiar with as necessary. | |
| | | **MM 4.7-6:** Prior to the issuance of grading permits, a qualified paleontologist or designated monitor shall be retained to monitor all ground-disturbing activity (with the exception of vibratory or hydraulic installation of tracking or mounting structures and foundations or supports) that occurs at any depth below ground surface.<br>1. 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.<br>a. 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 and the Bureau | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | of Land Management (BLM), may adjust the level of monitoring to circumstances, as warranted.<br>2. Paleontological monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments. The qualified paleontologist and paleontological monitor shall have authority to temporarily divert excavation operations away from exposed fossils to collect associated data and recover the fossil specimens if deemed necessary.<br>3. Following the completion of monitoring, the qualified paleontologist shall prepare a report documenting the absence or discovery of fossil resources on-site. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, recovery and curation efforts, and the methods used in these efforts, as well as describe the fossils collected and their significance. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department, the BLM and to an appropriate repository such as the Natural History Museum of Los Angeles County.<br>**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, such as the Natural History Museum of Los Angeles County. Accompanying notes, maps, and photographs shall also be filed at the repository. | |
| **Impact 4.7:** Cumulative Impacts | Less than significant | Implementation of Mitigation Measures MM 4.7-1 through MM 4.7-7 is required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **4.8 Greenhouse Gases** | | | |
| **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 |
| **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 | **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:<br>• Delineate hazardous material and hazardous waste storage areas | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | • Describe proper handling, storage, transport, and disposal techniques<br>• Describe methods to be used to avoid spills and minimize impacts in the event of a spill<br>• Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction and operation<br>• Establish public and agency notification procedures for spills and other emergencies including fires<br>• Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site<br>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 and the Bureau of Land Management (BLM) for inclusion in the projects permanent record.<br>Implement Mitigation Measure MM 4.17-1. | |
| **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 | Implement Mitigation Measures MM 4.9-1, MM 4.17-1 and:<br>**MM 4.9-2:** The project proponent shall continuously comply with the following:<br>a) The construction contractor or project personnel shall use herbicides that are approved for use in California, and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use). Personnel applying herbicides shall have all appropriate state and local herbicide applicator licenses and comply with all state and local regulations regarding herbicide use. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | b) Herbicides shall be mixed and applied in conformance with the manufacturer's directions.<br>c) The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife.<br>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.<br>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.<br>f) A written record of all herbicide applications on the site, including dates and amounts shall be furnished to the Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM). | |
| **Impact 4.9-3:** The project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. | Potentially significant | Implementation of Mitigation Measure MM 4.14-1 is required (See *Section 4.14-1, Public Services, for full text)*. | Less than significant |
| **Impact 4.9:** Cumulative Impacts | Potentially significant | Implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.14-1, and MM 4.17-1 would be required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **4.10 Hydrology and Water Quality** | | | |
| **Impact 4.10-1:** The project would violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality. | Potentially significant | Implementation of Mitigation Measures MM 4.7-4 and MM 4.9-1 would be required.<br>**MM 4.10-1:** Prior to the issuance of a grading permit, the project proponent shall complete a final drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study and plan shall include the following:<br>1. A numerical stormwater model for the project site that evaluates existing and proposed (with project) drainage conditions during storm events ranging up to the 100-year event.<br>2. An assessment of the potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation.<br>3. Engineering recommendations to be incorporated into the project and applied within the site boundary. Engineering recommendations will include measures to offset increases in stormwater runoff that would result from the project, as well as implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding on-site or off-site.<br>5. The 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 and Bureau of Land Management (BLM) prior to the issuance of grading permits. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.10-2:** The project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. | 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 or through the addition of impervious surfaces, in a manner which would result in substantial erosion and/or sedimentation on-site or off-site. | Potentially significant | Implementation of Mitigation Measure MM 4.10-1 would be required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.10-4:** The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff which would result in flooding on- or off site. | Potentially significant | Implementation of Mitigation Measure MM 4.10-1 would be required. | Less than significant |
| **Impact 4.10-5:** The project would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. | Potentially significant | Implementation of Mitigation Measure MM 4.10-1 would be required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.10-6:** The project would contribute to inundation by a flood hazard, tsunami, or seiche zones, that would result in risk of release of pollutants. | Less than significant | No mitigation measures are required. | Less than significant |
| **Impact 4.10-7:** 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 Measure MM 4.10-1 would be required. | Less than significant |
| **4.11 Land Use** | | | |
| **Impact 4.11-1:** The project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. | Less than significant | No mitigation measures are required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | | Level of Significance After Mitigation |
|---|---|---|---|---|
| **Impact 4.11:** Cumulative Impacts | Potentially significant | **MM 4.11-1:** | Prior to issuance of any building permit, the project proponent shall provide the Kern County Planning and Natural Resources Department with a Decommission Plan for review and approval. The plan would be carried out by the proponent or a County-contracted consulting firm(s) at a cost to be borne by the project proponent.<br>1. The Decommission Plan shall include, but not be limited to the following:<br>a) Factor in the cost to remove the solar panels and support structures, replace any disturbed soil from the removal of support structures (including all underground equipment), and control of fugitive dust on the remaining undeveloped land.<br>b) Salvage value for the solar panels and support structures shall be included in the financial assurance calculations.<br>c) The assumption, when preparing the estimate, is that the project proponent is incapable of performing the work or has abandoned the solar facility, thereby resulting in the County hiring an independent contractor to perform the decommission work.<br>2. In addition to submittal of a Decommission Plan, the project proponent shall post or establish and maintain with the County financial assurances related to the deconstruction of the site as identified on the approved Decommission Plan should at any point in time the project proponent determine it is not in their best interest to operate the facility. The financial assurance required prior to issuance of any building permit shall be established using one of the following:<br>a) An irrevocable letter of credit;<br>b) A surety bond; | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 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<br>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.<br>3. The financial assurances documents shall include the following verbiage, including any required verbiage through Kern County Planning and Natural Resources Department's consultation and review with Kern County Counsel:<br>a) Financial institution or Surety Company shall give the County a minimum of 120 days' notice of intent to terminate the letter of credit or bond.<br>b) Financial assurances shall be reviewed annually by the respective counties or County-contracted consulting firm(s) at a cost to be borne by the project proponent to substantiate those adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommission Plan.<br>c) Should the project proponent deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance.<br>d) Financial institution or Surety Company shall be licensed to conduct business in the State of California<br>4. Once deconstruction has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted will be adjusted or returned accordingly. Any funds not utilized through decommission of the site by the County shall be returned to the project proponent. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 5. Should any portion of the solar field not be in operational condition for a consecutive period of twenty-four (24) months that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project proponent, by the County. Within this sixty (60) day period, the property owner, solar field owner, or project proponent may provide the County a written request and justification for an extension for an additional 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.<br>6. In no case shall a solar field which has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date the solar facility was first deemed abandoned. | |
| **4.12 Mineral Resources** | | | |
| **Impact 4.12-1:** 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 |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **4.13 Noise** | | | |
| **Impact 4.13-1:** The project would result in generation of a substantial temporary or permanent increase in 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. | Less than significant | No mitigation would be required. | Less than significant |
| **Impact 4.13-2:** The project would generate excessive ground-borne vibration or ground-borne noise levels. | Less than significant | No mitigation would be required. | Less than significant |
| **Impact 4.13-3:** The project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. | Less than significant | No mitigation would be required. | Less than significant |
| **Impact 4.13:** Cumulative Impacts | Less than significant | No mitigation would be required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | | Level of Significance After Mitigation |
|---|---|---|---|---|
| **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 | **MM 4.14-1:** | Prior to 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.<br>The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department and the Bureau of Land Management (BLM) for review and approval. A copy of the approved Fire Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department and the BLM. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to the following:<br>1. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.<br>2. 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.<br>3. Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees.<br>4. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.<br>5. Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 6. The project proponent/operator shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel. | |
| | | **MM 4.14-2:** The project proponent/operator shall implement the following mitigation steps at the project site:<br>1. 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 20 and paid on a yearly basis. Any operation that continues past 20 years will pay the same yearly fee. 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.<br>2. Written verification of ownership of the project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company with assessed taxes that total less than $1,000 per megawatt per year, then 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. | |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | 3. 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, using this address for acquisition, purchasing and billing purposes associated with the proposed project. 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.<br>4. 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. | |
| **Impact 4.14:** Cumulative Impacts | Potentially significant | Implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2 is required, see above. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | | Level of Significance After Mitigation |
|---|---|---|---|---|
| **4.15 Transportation** | | | | |
| **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 | **MM 4.15-1:** | Prior to the issuance of construction or building permits, the project proponent/operator shall:<br>1. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department- Development Review and the California Department of Transportation offices for District 9, as appropriate, for approval. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and must include, but not be limited to, the following issues:<br>a. Timing of deliveries of heavy equipment and building materials;<br>b. Directing construction traffic with a flag person;<br>c. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;<br>d. Ensuring access for emergency vehicles to the project sites;<br>e. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;<br>f. Maintaining access to adjacent property; and,<br>g. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible.<br>2. Prior to construction permits issuance, obtain all necessary encroachment permits for the work within the road right-of- | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| | | way or use of oversized/overweight vehicles that will utilize county maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the Kern County Planning and Natural Resources Department, the Kern County Public Works Department-Development Review, and the California Department of Transportation.<br>3. 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.<br>4. 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.<br>5. 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 4.15-2:** The project would conflict or be inconsistent with CEQA *Guidelines* Section 15064.3, subdivision (b). | Less than significant | No mitigation measures are required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.15:** Cumulative Impacts | Potentially significant | Implementation of Mitigation Measure MM 4.15-1 would be 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). | Potentially significant | Implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2 would be required. | Less than significant |

| | | | |
|---|---|---|---|
| **Impact 4.16-1b:** The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | No impact | No mitigation measures are required. | No impact |
| **Impact 4.16:** Cumulative Impacts | No impact | No mitigation measures are required. | No impact |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **4.17 Utilities and Service Systems** | | | |
| **Impact 4.17-1:** The project would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. | Potentially significant | Implementation of Mitigation Measure MM 4.10-1 is required. (See Section 4.10, *Hydrology and Water Quality*, for full text.) | Less than significant |
| **Impact 4.17-2:** The project would have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. | Less than significant | No mitigation measures are required. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.17-3:** 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 | **MM 4.17-1:** During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible.<br>1. An on-site Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance, Trash Abatement and Pest Management Program.<br>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.<br>3. The on-site 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.<br>4. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM) prior to issuance of building permits.<br>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 |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.17:** Cumulative Impacts | Potentially significant | Implementation of Mitigation Measures MM 4.10-1 and MM 4.17-1 would be required. (See Section 4.10, *Hydrology and Water Quality*, for full text). | Less than significant |
| **4.18 Wildfires** | | | |
| **Impact 4.18-1:** 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 4.18-2:** 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 Mitigation Measure MM 4.14-1. | Less than significant |

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

| Impact | Level of Significance Before Mitigation | Mitigation Measures | Level of Significance After Mitigation |
|---|---|---|---|
| **Impact 4.18-3:** 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 | Implement Mitigation Measure MM 4.7-4. | Less than significant |
| **Impact 4.18:** Cumulative Impacts | Potentially significant | Implement Mitigation Measures MM 4.7-4 and MM 4.14-1. | Significant and Unavoidable |

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Chapter 2
# Introduction

## 2.1 Intent of the California Environmental Quality Act

The Kern County Planning and Natural Resources Department, acting as lead agency under the California Environmental Quality Act (CEQA), and Bureau of Land Management (BLM) acting as lead agency under the National Environmental Policy Act (NEPA) have determined that a joint Environmental Impact Report (EIR)/Environmental Assessment (EA) document must be prepared for the Camino Solar Project (project or proposed project). The proposed project is located on approximately 383 acres and would generate up to 44 megawatts (MW) of electricity from a photovoltaic (PV) solar facility in unincorporated Kern County. A new 34.5 kilovolt (kV) electrical collector line would be constructed on private land between the Camino Solar site and the Manzana substation, where transformers would increase the voltage from 34.5 kV to 230 kV. The energy would then be transferred to the Southern California Edison (SCE) Whirlwind Substation using the existing Manzana Wind 230 kV generation-tie (gen-tie) line.

The proposed project would require approval of a Conditional Use Permit 7, Map 216, to allow for the construction and operation of a solar electrical generating facility on a site with an "A" (Exclusive Agriculture) designation and Open Space zoning classification. The proposed project is described in detail in Chapter 3, *Project Description*.

This EIR/EA has been prepared pursuant to the following:

CEQA (Public Resources Code, Section 21000 et seq.)

CEQA *Guidelines* (California Code of Regulations ("C.F.R."), Title 14, Chapter 3, Section 15000 et seq.)

The Kern County CEQA Implementation Document

NEPA (42 U.S.C. Section 4321)

Council on Environmental Quality (CEQ) regulations (40 C.F.R. Parts 1500–1508)

BLM NEPA Handbook H-1790-1

## 2.2 National Environmental Policy Act Process and Joint Document Organization

This EIR/EA has been organized such that all discussion relevant to the NEPA process, including the full contents of the EA, are wholly contained in Chapter 11 of this EIR/EA. The federal regulations characterize an EA as "a concise public document" that provides sufficient evidence and analysis for determining the significance of effects from a proposed action when no Environmental Impact Statement is required (40 C.F.R. Section 1508.9) and that serves as a basis for reasoned choice. The EA provides the following content:

Introduction

BLM's purpose and need and decision to be made

Identification of issues for analysis

Description of the proposed action and alternatives analyzed in the EA

Analysis of land use plan conformance and identification of relationships to statutes, regulations, and other plans

Analysis of environmental consequences of the proposed action and alternatives

Summary of NEPA consultation and coordination and a list of preparers of the EA

## Purpose of California Environmental Quality Act Process

This EIR has been prepared pursuant to the following:

The CEQA (Public Resources Code, Section 21000 et seq.);

The CEQA *Guidelines* (California Code of Regulations [CCR] Title 14, Chapter 3, Section 15000 et seq.); and

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.

# 2.3 Purpose of this Environmental Impact Report/Environmental Assessment

An EIR is a public informational document used in the government agency planning and decision-making process. The purposes of an EA are to determine the "significance" of environmental impacts and to provide a basis for informed decision making by federal agencies. Refer to Chapter 11 for additional details about the EA. This project-level EIR/EA will analyze the environmental impacts of the proposed project. The Kern County Planning Commission (and the Board of Supervisors if the decision of the Planning Commission is appealed) will consider the information in the EIR/EA, including the public comments and staff response to those comments, during the public hearing process. The final decision on the Conditional Use Permit is made by the Kern County Planning Commission (or the Board of Supervisors if the decision of the Planning Commission is appealed), who may approve, conditionally approve, or deny the project. Pursuant to CEQA, 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.

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 CEQA lead agency regarding the impacts, the level of significance of the impacts both with and without mitigation, and describes 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 review process gives both agencies and individuals an opportunity to share expertise, discuss agency analyses, check for accuracy, detect omissions, discover public concerns, and solicit mitigation measures and alternatives capable of avoiding or reducing the significant effects of the project while still attaining most of the basic objectives of the project.

## Issues to Be Resolved

Section 15123(b)(3) of the CEQA *Guidelines* requires that an EIR to discuss all project related environmental issues as well as the choice among alternatives and all applicable mitigation measures. The following major issues to be resolved by the lead agency include the following:

Does the EIR adequately describe the environmental impacts of the project;

Preferred choice among alternatives;

Should the recommended mitigation measures be adopted or modified; and

Do additional mitigation measures need to be applied to the project.

# 2.4 Terminology

To assist reviewers in understanding this EIR/EA, 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. In this EIR/EA, the terms “project” and “proposed action” are equivalent.

*Environment* refers to the physical conditions that exist in the area 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
- 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/EA uses a variety of terms to describe the level of significance of adverse impacts for purposes of CEQA. 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.

# 2.5 CEQA 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 (NOP)/Initial Study (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 13, 2018, and ending on July 12, 2018.

**Draft EIR Preparation/Notice of Completion (NOC).** A Draft EIR is prepared, incorporating public comments 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. For this project, Kern County is preparing an EIR/EA with the BLM and will circulate it for review as described here.

**Preparation and Certification of Final EIR/EA.** The Kern County Planning Commission will consider the Final EIR/EA and the project, acting in an advisory capacity to the Kern County Board of Supervisors, and take final action on the Conditional Use Permit. At least one public hearing will be held by both the Planning Commission to consider the Final EIR/EA, take public testimony, and then approve, conditionally approve, or deny the project. The EIR/EA prepared for this project will be considered in accordance with the process described here.

# Notice of Preparation

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, responsible and affected public agencies, special districts, and members of the public and other interested parties for a 30-day public review period beginning June 13, 2018, and ending on July 12, 2018. 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/EA.

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

# 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 at 1:30 p.m. on June 27, 2018, at the Kern County Planning and Natural Resources Department, located at 2700 "M" Street, Suite 100, Conference Room 1A, Bakersfield, California.

## Notice of Preparation/Initial Study and Scoping Meeting Results

No oral comments were received at the June 27, 2018, 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, along with the Summary of Proceedings from the Scoping Meeting.

## Notice of Preparation/Initial Study Written Comments

The following specific environmental concerns listed in **Table 2-1,** *Summary of 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 |
|---|---|
| **Federal Agencies** | |
| United States Environmental Protection Agency<br>July 12, 2018 | The commenter notes support of renewable energy project, and the project's potential to co-locate solar and wind energy on the same parcels of land. The commenter provides recommendations on what information and analysis should be included as part of the EA, including Purpose and Need, Alternatives Analysis, Water Resources, Sizing Stormwater Infrastructure, Air Quality, Biological Resources, Hazardous Materials/Waste Management, Environmental Justice, Cultural Resources and Tribal Consultation, and Cumulative Impacts. |
| **State Agencies** | |
| State Clearinghouse<br>June 13, 2018 | The commenter acknowledges the receipt of the NOP. |
| California Department of Conservation (CDOC) Division of Oil, Gas, and Geothermal Resources<br>June 25, 2018 | There commenter states there are no known oil, gas or geothermal wells located within the project boundary. CDOC shall be notified if wells are encountered during development activities. |
| **Local** | |
| Kern County Public Works – Floodplain Management<br>July 5, 2018 | 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.<br>Per the Kern County Floodplain Management Ordinance, associated flood hazard requirements will need to be incorporated into the design of the project. |

| Commenter/Date | Summary of Comment |
|---|---|
| Kern County Public Works - Building and Development Division<br>June 29, 2018 | The commenter states that construction traffic should be coordinated to avoid conflicts during construction. A Construction Trip Generation Analysis that is stamped and signed by a registered Civil or Traffic Engineer should be prepared incorporating the Highway Capacity Manual (2010). A traffic control plan should be provided that address routes, duration, and manner of traffic control so construction traffic is accommodated. Any roads damaged by the project should be repaired. Encroachment permits should be obtained for work within the county right of way. Obtain transportation permits for oversized or overweight loads that will use county-maintained roads, which may require California Highway Patrol escort. These permits may be obtained from the County Building and Development Division's permit engineer. Request to contact Caltrans District 9 regarding the project. |
| **Interested Parties** | |
| Southern California Edison (SCE)<br>July 12, 2018 | The commenter raises concern that the proposed project may impact SCE's overhead transmission lines. The commenter requires a signed agreement if the project should require any development permanent or temporary or grading within the right-of-way of SCE's corridors. Proposed use will be reviewed on a case-by-case basis, and approval or denial will be in writing based on review of the maps provided by the developer and compatibility with SCE right-of-way constraints and rights. Additionally, the commenter notes the SCE must comply with General Order 95, which establishes rules for the overhead line design, construction and maintenance. Project design should not conflict with the SCE's existing and proposed transmission line designs. Further, SCE notes the construction, modification, and relocation of transmission lines, or electrical facilities that are designed to operate at or above 50 kilovolts (kV) may be subject to the California Public Utilities Commission General Order 131-D. The Draft EIR/EA should identify and discuss the construction of SCE facilities needed to interconnect the project. If not, approval of project could be delayed two or more years as SCE pursues separate, mandatory CEQA or NEPA review through an applicable permitting agency. |
| Audubon California<br>July 12, 2018 | The commenter provides background information on Audubon California, and a link to the 2014 Climate Science, which identifies 314 species of North American birds that are seriously threatened as a result of climate change. The commenter provides a brief project description and expresses support of the proposed project. The commenter provides specific recommendations for the analysis of impacts to Swainson's hawk, burrowing owl, California condor, and migratory birds. |
| Gary Wartik<br>June 23, 2018 | The commenter requests clarification on how to locate the NOP/IS documents on the County's website, or requests information to be directly mailed to him. Attempting to determine if his property is within the project boundary. To which the County responded that his property is 484 feet north of the project boundary and that a direct link to materials is provided on the County's website and a vicinity map is provided. |
| Howard Ferguson-Woltzman<br>June 24, 2018 | The commenter inquires how the project will impact the property of the Jean B. Woltzman Trust (APN 476-090-18-00-9). States this property had been leased to Enxco for a few years during construction of existing wind farm. This parcel is not part of the project boundary. |

## Availability of the Draft EIR/EA

This Draft EIR/EA 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/EA and the full administrative record for the proposed project, including all studies, are available for review during normal business hours Monday through Friday at the following location:

**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/EA is also available on the Kern County Planning and Natural Resources Department website:

https://kernplanning.com/planning/environmental-documents/.

Additionally, this EIR/EA is available at the following libraries

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

**Kern County Library**
**Ridgecrest Branch**
131 East Las Flores Avenue
Ridgecrest, CA 93555

# 2.6 NEPA Decision Making Process

The BLM will decide whether to grant, grant with conditions, or deny the requested right-of-way (ROW) to construct, operate, maintain and decommission/restore the Camino Solar Project based upon the analysis presented in the EA. The EA component (see Chapter 11, Environmental Assessment) of this EIR/EA has been prepared in accordance with Counsel on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1508.9 (b)) and BLM's Land Use Planning Handbook H-1601-1. BLM will accept comments on the EA for up to 30 days after publication. The EA component of this EIR/EA will also be available for review and comment at the BLM ePlanning website at:

eplanning.blm.gov

BLM will also be accepting public comments at the following mailing and email addresses:

**BLM Ridgecrest Field Office**
Paul Rodriquez, Project Manager
300 South Richmond Road
Ridgecrest, CA 93555
Email: prodriqu@blm.gov or cwoods@blm.gov

After the public comment period ends, and if the EA analysis shows that the project would have no significant environmental effects, the BLM will prepare a Finding of No Significant Impact (FONSI). The FONSI would succinctly state the reasons for deciding that the project will have no significant environmental effects. After preparation of the FONSI, the BLM will prepare and sign a Decision Record that will document BLM's decision on whether to grant, grant with conditions, or deny the requested ROW.

# 2.7 Format and Content

This EIR/EA addresses the potential environmental effects of the proposed project and was prepared following input from the public and responsible and affected agencies, and through the EIR/EA scoping process, as discussed previously. The contents of this EIR/EA 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/EA would be required to address potentially significant environmental impacts related to the following CEQA environmental factors:

- Aesthetics
- Agriculture and Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Tribal Cultural Resources
- 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
- Utilities and Service Systems
- Wildfire

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

- Population and Housing
- Recreation

The NOP/IS determined that the proposed project would not include any regular permanent employees as no operations and maintenance buildings would be constructed. Maintenance personnel would be expected to visit the project site several times per year for routine maintenance, but they would likely be drawn from the existing labor force associated with the Manzana Wind facility 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 or housing need in the area. Consequently, this would represent a minor increase in the number of users at local recreational facilities. As a result, the proposed 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/EA.

# Required EIR/EA Content and Organization

This EIR/EA includes all of the sections required by CEQA *Guidelines*. **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 within this EIR/EA 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 proposed project (Section 15126.6) | Chapter 6 |
| Organizations and persons consulted | Chapter 8 |
| List of preparers (Section 15129) | Chapter 9 |
| Bibliography (Section 15129) | Chapter 10 |
| Environmental Assessment | Chapter 11 |

Although not required by CEQA, the EA is provided in Chapter 11. The content and organization of this EIR/EA are designed to meet the requirements of CEQA and the CEQA *Guidelines*, NEPA, CEQ regulations (40 CFR Parts 1500–1508), and BLM NEPA Handbook H-1790-1 as well as to present issues, analysis, mitigation, and other information in a logical and understandable way. This EIR/EA is organized into the following sections listed below:

Chapter 1, *Executive Summary*, provides a summary of the project description and a summary of the environmental impacts and mitigation measures that are identified in the EIR/EA.

Chapter 2, *Introduction*, provides CEQA compliance information, an overview of the decision-making process, organization of the EIR/EA, and a responsible and trustee agency list.

Chapter 3, *Project Description*, provides a description of the location, characteristics, and objectives of the proposed project, and the relationship to applicable plans and policies.

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/EA.

Chapter 8, *Organizations and Persons Consulted*, lists the organizations and persons contacted during preparation of this EIR/EA.

Chapter 9, *Preparers*, identifies persons involved in the preparation of the EIR/EA.

Chapter 10, *Bibliography*, identifies reference sources for the EIR/EA.

Chapter 11, *Environmental Assessment*, provides review and analysis of the proposed project for compliance with NEPA.

*Appendices* provide information and technical studies that support the environmental analysis contained within the EIR/EA.

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

"Introduction" provides a brief overview on the purpose of the section being analyzed with regard to the proposed 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 proposed project would contribute to a significant cumulative impact, and if so, identifies cumulative mitigation measures.

# 2.8 CEQA Responsible and Trustee Agencies

Projects or actions undertaken by the CEQA 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 proposed project may include, but are not limited to, the following:

## Federal Agencies

Bureau of Land Management

United States Fish and Wildlife Service

Federal Aviation Administration

U.S. Army Corps of Engineers

## State Agencies

California Public Utilities Commission

California Department of Fish and Wildlife

Lahontan Regional Water Quality Control Board

National Pollutant Discharge Elimination System

General Construction Stormwater Permit (Preparation of a stormwater pollution prevention plan)

California Department of Transportation

## Local Agencies

Eastern Kern County Air Pollution Control District

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

## Kern County

Kern County Board of Supervisors

Planning and Natural Resources Department

Public Works Department

Environmental Health Services Division

Kern County Fire Department

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

# 2.9 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/EA and are available for public review at the Kern County Planning and Natural Resources Department. A brief synopsis of the scope and content of these documents is provided below.

# Kern County General Plan

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 to 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.

# Kern County Zoning Ordinance

According to the Kern County Zoning Ordinance Chapter 19.02.020, Purposes, Title 19 was adopted to promote and protect 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 title 19;

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.

# Destination 2030: Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern Council of Governments, and was adopted in June 19, 2014. Destination 2030, (the 2014 RTP), is a 26-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County (Kern Council of Governments, 2007). 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 2014 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 emissions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation, ensuring consistency between low-income housing need and transportation

planning. The RTP includes programs and projects pertaining to congestion management, transit, airports, cyclists and pedestrians, roadways, and freight. In addition, it provides a discussion of all mechanisms used to finance transportation and air quality program implementation.

## 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 airport influence area of the Inyokern Airport and is located in a medium density residential land use area. Specifically, the proposed project is located in Compatibility Zone C (County of Kern, 2012). 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.

# 2.10 Sources

This EIR/EA is dependent upon information from many sources. Some sources are studies or reports that have been prepared specifically for the project analysis. 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/EA are listed in Chapter 10, *Bibliography*, and are available for review during normal business hours at the:

Kern County Planning and Natural Resources Department
2700 “M” Street, Suite 100
Bakersfield, CA 93301-2370

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

Chapter 3
# Project Description

## 3.1 Introduction

This Environmental Impact Report/Environmental Assessment (EIR/EA) has been prepared by Kern County (County) and the Bureau of Land Management (BLM), which are co-lead agencies, to identify and evaluate potential environmental impacts associated with implementation of the Camino Solar Project (project/proposed project) proposed by Aurora Solar, LLC (project proponent/operator) on approximately 383 acres of an 890-acre facility siting area in south-central Kern County. The project proponent proposes to develop a photovoltaic (PV) solar facility and associated infrastructure with a maximum generating capacity of 44 megawatts (MW) of renewable electrical energy and an energy storage system of up to 44 MW.

The project site is located within the central-eastern portion of the 189 MW Manzana Wind Power Project (Manzana Project), which began operations in 2012, and is located on private land. Given this location, the proposed project would share the existing infrastructure, including transmission line, substation, and site access roads of the Manzana Project. New 34.5 kilovolt (kV) electrical collector line(s) would be constructed on private land between the solar array and energy storage system and the Manzana Project substation, where transformers would increase the voltage from 34.5 kV to 220 kV. The proposed project would interconnect at the Southern California Edison (SCE) Whirlwind substation using the existing Manzana Project 220 kV generation-tie (gen-tie) line.

The project site encompasses a study area that includes both privately owned and publicly owned land. While approximately 150 acres of the site has either been purchased or leased by the project proponent, the remainder the site (approximately 233 acres) is administered by the BLM. The BLM-administered area of the project site is not subject to the local permitting authority of Kern County and will need to be separately considered by the BLM.

## 3.2 Project Location

The proposed project is located in the southern central portion of Kern County, in central California as shown in **Figure 3-1**, *Project Vicinity*. The site is approximately 15 miles west of California State Route (SR) 14, 12.5 miles south of SR-58, and 8 miles north of SR-138 (or West Avenue D). The nearest populated areas are the unincorporated community of Rosamond, approximately 16 miles southeast, and the city of Tehachapi, approximately 12 miles to the north. The approximately 890-acre facility siting area includes the 383-acre project footprint, which comprises approximately 233 acres of public lands administered by the Bureau of Land Management (BLM) Ridgecrest Field Office and 150 acres of privately held lands. The primary access route to the project site is from SR-14 by way of Rosamond boulevard from the east, and then along 170th Street and access roads entitled for the Manzana, Pacific Wind, and Catalina projects.

The proposed project is located on generally undeveloped rangeland and within United States Geological Survey (USGS) 7.5 -minute quadrangles, Sections 23, 26, and 27 Township 10 North, Range 15 West. The BLM portion of the project site is within USGS 7.5 -minute quadrangles, Section 36, lots 1 through 8 Township 10 North, Range 15 West. **Table 3-1,** *Project Site and Surrounding Land Use Designations and*

*Zoning Classifications*. **Figure 3-2**, *Project Site*, depicts the proposed project's boundaries. Additionally, the project site consists of 18 total parcels and the Assessor Parcel Numbers (APNs) are summarized in **Table 3-2,** *Camino Solar Project County-Administered Assessor Parcel Numbers (APNs),* and **Table 3-3,** *Camino Solar Project BLM-Administered Assessor Parcel Numbers (APNs).*

**TABLE 3-1: PROJECT SITE AND SURROUNDING LAND USE DESIGNATIONS AND ZONING CLASSIFICATIONS**

| | Existing Land Use | Existing Land Use Designations | Existing Zoning Classifications |
|---|---|---|---|
| **Project Site** | Undeveloped and Manzana Project Wind Turbines | 1.1 (State or Federal Land);<br>8.3 (Extensive Ag/20-acre min);<br>8.5 (Resource Management/20-acre min); and<br>8.3/2.1 (Extensive Ag/Seismic Hazard) | A (Exclusive Agriculture);<br>A WE (A - Wind Energy);<br>A GH (A- Geological Hazard);<br>A GH WE (A - Geological Hazard - Wind Energy);<br>OS (Open Space) |
| **North** | Undeveloped and Manzana Project Wind Turbines | 1.1 (State or Federal Land); and<br>8.3 (Extensive Ag/20-acre min) | A (Exclusive Agriculture); and<br>A WE (A - Wind Energy) |
| **South** | Undeveloped, Scattered Residential, and Manzana Project Wind Turbines | 8.3 (Extensive Ag/20-acre min);<br>8.5 (Resource Management/20-acre min); and<br>2.1 (Seismic Hazard) | A (Exclusive Agriculture);<br>A WE (A - Wind Energy);<br>A GH (A - Geological Hazard);<br>A GH WE (A - Geological Hazard - Wind Energy);<br>PL RS GH (Platted Lands - Residential Suburban - Geologic Hazard); and<br>PL RS (Platted Lands - Residential Suburban) |
| **East** | Undeveloped and Manzana Project Wind Turbines | 8.3 (Extensive Ag/20-acre min); and<br>8.5 (Resource Management/20-acre min); | A (Exclusive Agriculture);<br>A WE (A - Wind Energy);<br>PL RS MH (Platted Lands - Residential Suburban - Mobile home);<br>PL RS (Platted Lands - Residential Suburban); and<br>OS (Open Space). |
| **West** | Undeveloped, Scattered Residential and Manzana Project Wind Turbines | 8.3 (Extensive Ag/20-acre min); and<br>2.1 (Seismic Hazard) | A (Exclusive Agriculture);<br>A GH (Geological Hazard);<br>A GH WE (A - Geological Hazard - Wind Energy); and<br>A WE (A - Wind Energy) |

**TABLE 3-2: CAMINO SOLAR PROJECT (PRIVATE LAND) ASSESSOR PARCEL NUMBERS (APNS)**

| | Assessor Parcel Number (APN) | Parcel Size (acres) | Project Site (acres) |
|---|---|---|---|
| 1 | 476-052-09 | 324.9 | 65.3 |
| 2 | 476-110-03 | 45.9 | 26.2 |
| 3 | 476-110-04 | 45.3 | 8.0 |
| 4 | 476-062-04 | 22.4 | 0.5 |
| 5 | 476-110-14 | 23.6 | 10.9 |
| 6 | 476-110-16 | 20.5 | 17.8 |
| 7 | 476-110-19 | 20.6 | 3.4 |
| 8 | 476-130-11 | 4.1 | 2.1 |
| 9 | 476-130-02 | 2.5 | 0.4 |
| 10 | 476-130-03 | 2.5 | 2.4 |
| 11 | 476-130-04 | 2.5 | 1.9 |
| 12 | 476-130-10 | 2.5 | 0.3 |
| 13 | 476-130-12 | 2.1 | < 0.1 |
| 14 | 476-130-13 | 2.1 | 1.9 |
| 15 | 476-130-14 | 4.1 | 3.8 |
| 16 | 476-130-17 | 2.8 | 1.9 |
| 17 | 476-130-18 | 2.8 | 1.9 |
| | **Totals** | **531.2** | **150** |

**TABLE 3-3: CAMINO SOLAR PROJECT BLM-ADMINISTERED (PUBLIC LAND) ASSESSOR PARCEL NUMBERS (APNS)**

| | Assessor Parcel Number (APN) | Parcel Size (acres) | Project Site (acres) |
|---|---|---|---|
| 1 | 476-061-09 | 359.3 | 233.3 |
| | **Totals** | **359.3** | **233** |

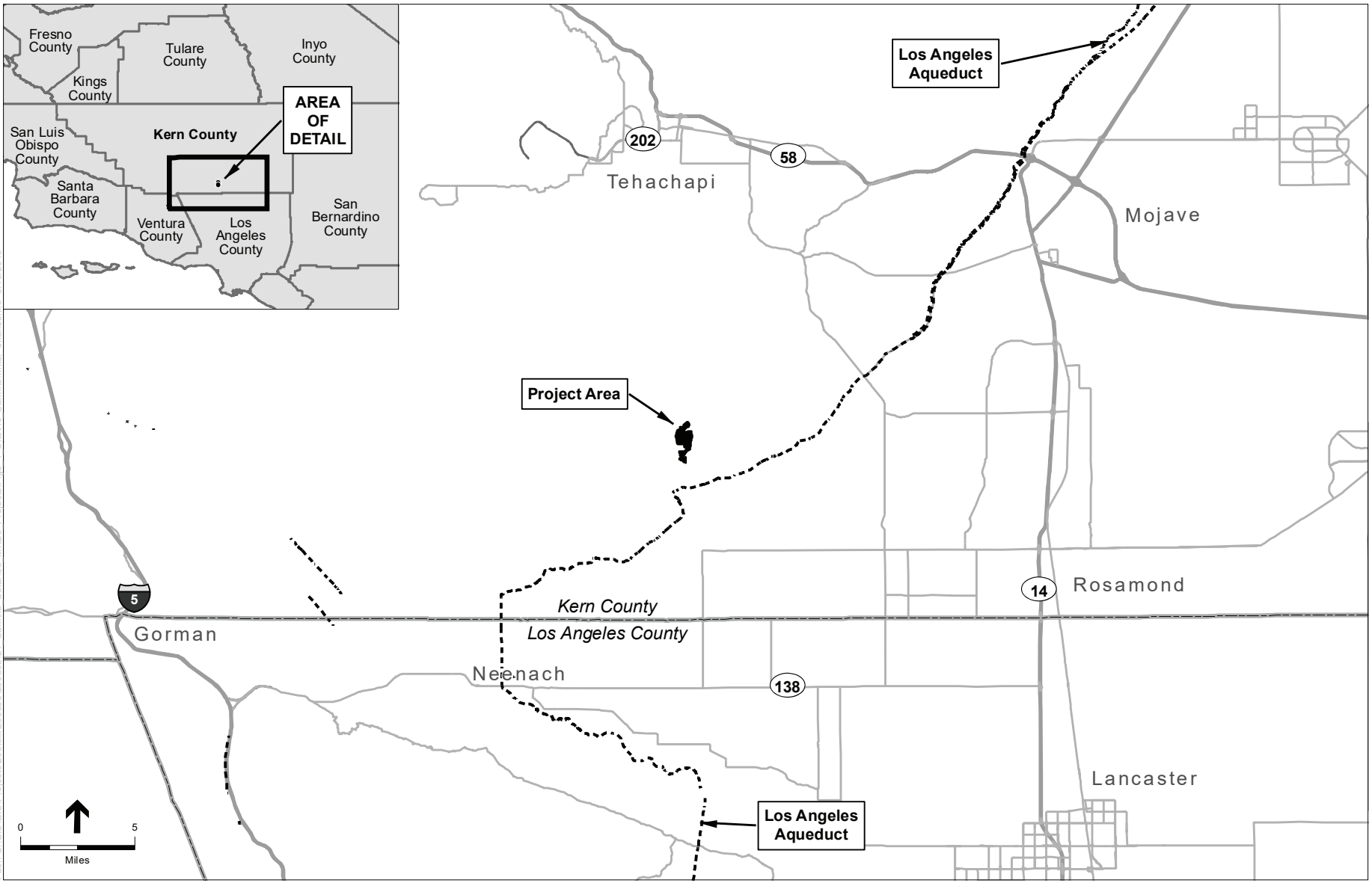


**Figure 3-1: PROJECT VICINITY**

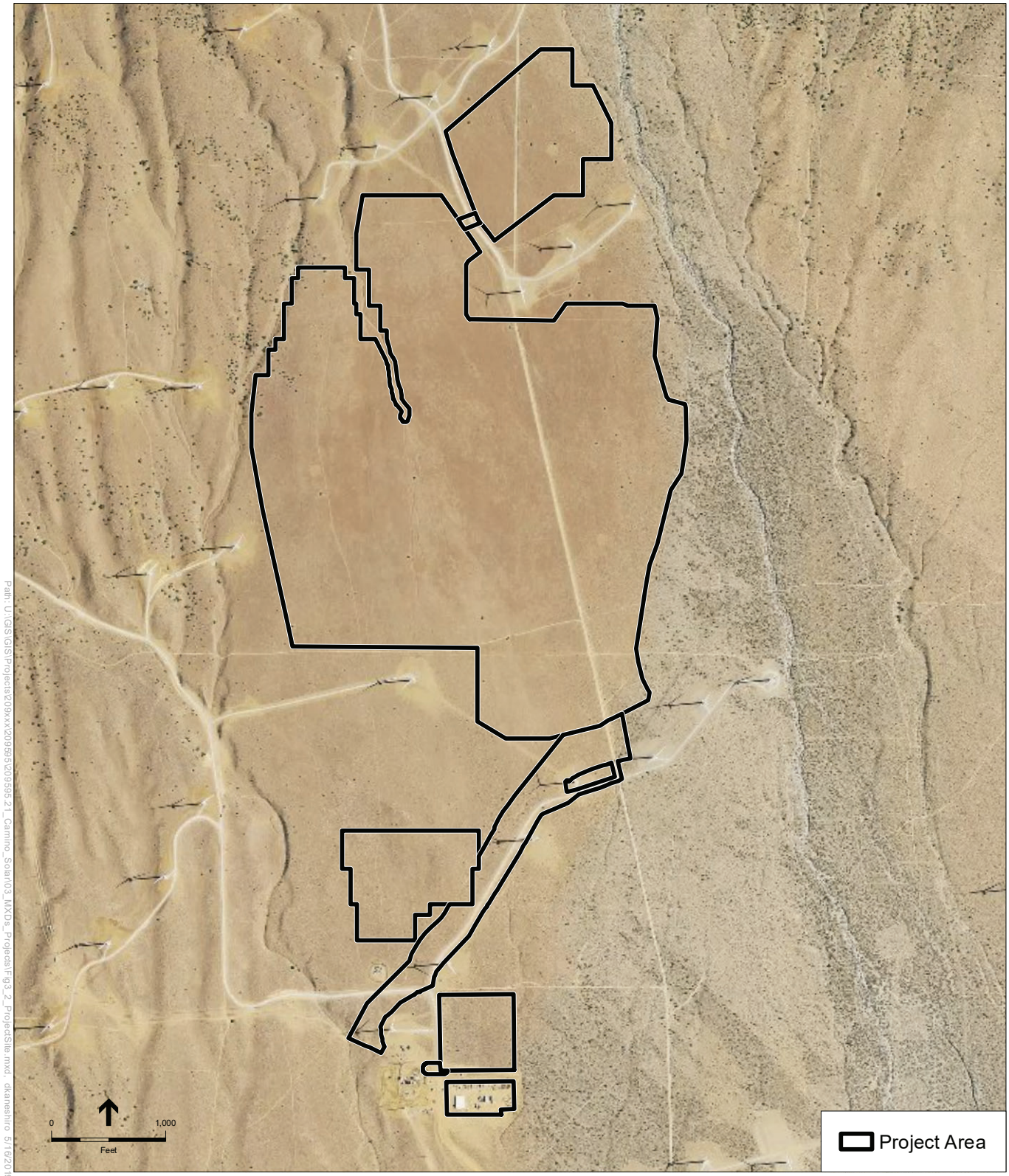


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**Figure 3-2: PROJECT SITE**

# 3.3 Project Objectives

The proposed project would provide Kern County as well as 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. The following is a list of project objectives:

- Generate approximately 44 MW of electricity at a cost that is competitive on the renewable market.
- Establish solar PV power-generating facilities 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.
- Locate the proposed project in Kern County near an existing electrical distribution system to Minimize the potential impact on the environment.
- Maximize the use of existing infrastructure (transmission lines and roads)
- Minimize the potential impacts on threatened and endangered species
- Reduce the emission of greenhouse gases from the generation of electricity
- Interconnect directly to SCE's and/or California Independent System Operator electrical transmission system.
- Establish energy storage facilities of sufficient size and configuration to reliably store electricity in an economically feasible and commercially financeable manner.
- Assist California utilities in meeting their obligations under California's RPS. In April 2011, Governor Brown signed into law SB X1-2, which establishes a new RPS for all electricity retailers in the state. Electricity retailers must adopt the new RPS goals of 20 percent of retails sales from renewables by the end of 2013, 25 percent by the end of 2016, with the 33 percent requirement being met by the end of 2020.
- Support California's RPS Program consistent with the timeline established by Senate Bill 100 (also known as the "California Renewables Portfolio Standard Program: emissions of greenhouse gases") as approved by the California legislature and signed by Governor Brown in September 2018, which increases RPS in 2030 from 50 percent to 60 percent and establishes a goal of 100 percent RPS by 2045.
- Assist California in meeting greenhouse gas (GHG) emissions reduction goal by 2020 and 2030 as required by the California Global Warming Solutions Act (AB 32), as amended by SB 32 in 2016.

# 3.4 Environmental Setting

## Regional Setting

The project site is located in the southern central portion of Kern County, in central California as shown in Figure 3-1, *Project Vicinity*. The project site is located at southeastern base of the Tehachapi Mountains at the western edge of the Antelope Valley, on lands that gradually slope downward from the northwest to the southeast. Elevations on the project site ranges from approximately 2,720 feet to 3,020 feet (829 to 920 meters) above mean sea level. This area is geographically defined by the intersection where the Tehachapi Mountains meet the San Gabriel Mountains.

The project site is approximately 6 miles north of Los Angeles County, approximately 16 miles northwest of the community of Rosamond, approximately 12 miles south of the city of Tehachapi, and approximately 44 miles southeast of the city of Bakersfield. Other communities within the vicinity of the proposed project include California City in Kern County and the cities of Lancaster and Palmdale in Los Angeles County, which are approximately 28 miles northeast, 20 miles southeast, and 27 miles southeast of the project site, respectively. Edwards Air Force Base is located approximately 15.5 miles east of the project site.

Land uses in the project area consist of a mix of agricultural grazing, undeveloped land, scattered single-family residences, and several approved or proposed large-scale solar facilities. Several commercial wind projects are also operating north of the Whirlwind substation. Topography across the project site is relatively flat and gradually slopes downward from the northwest to the southeast. Desert vegetation dominates the region.

## Surrounding Land Uses and Project Site Conditions

The project site is located within the central-eastern portion of the Manzana Project, which began operations in 2012 and is traversed by a network of unpaved dirt roads. Lands within the project site include 233 acres of public lands administered by the BLM Ridgecrest Field Office and 150 acres of privately held lands. The project site is primarily comprised of undeveloped lands that are designated for agricultural uses, but are land that is not currently irrigated or otherwise used for agricultural purposes.

The project site is within the boundaries of BLM's California Desert Conservation Area Plan and the California Desert Renewable Energy Conservation Plan. Specifically, the proposed project is located within a "development focus area" as defined by Desert Conservation Area Plan. The vegetation communities at the project site are largely dominated by non-native species, limiting the potential habitat quality for native plants and wildlife. Portions of the project site are dominated by native plants that include Joshua Tree woodlands, Mojave Desert wash scrub, Mojavean juniper woodland and scrub, and non-native grassland, as classified according to the Manual of California Vegetation, online edition.

As shown in **Figure 3-3**, *Flood Zone Hazards*, the project site is located within Flood Zone X as designated by the Flood Insurance Rate Map (FIRM) (06029C3975E) as issued by the Federal Emergency Management Agency (FEMA). Flood Zone X is an identified area determined to be outside the 100-year and 500-year floodplain and classified as being within the 1 percent and 0.2 percent annual chance of flooding.

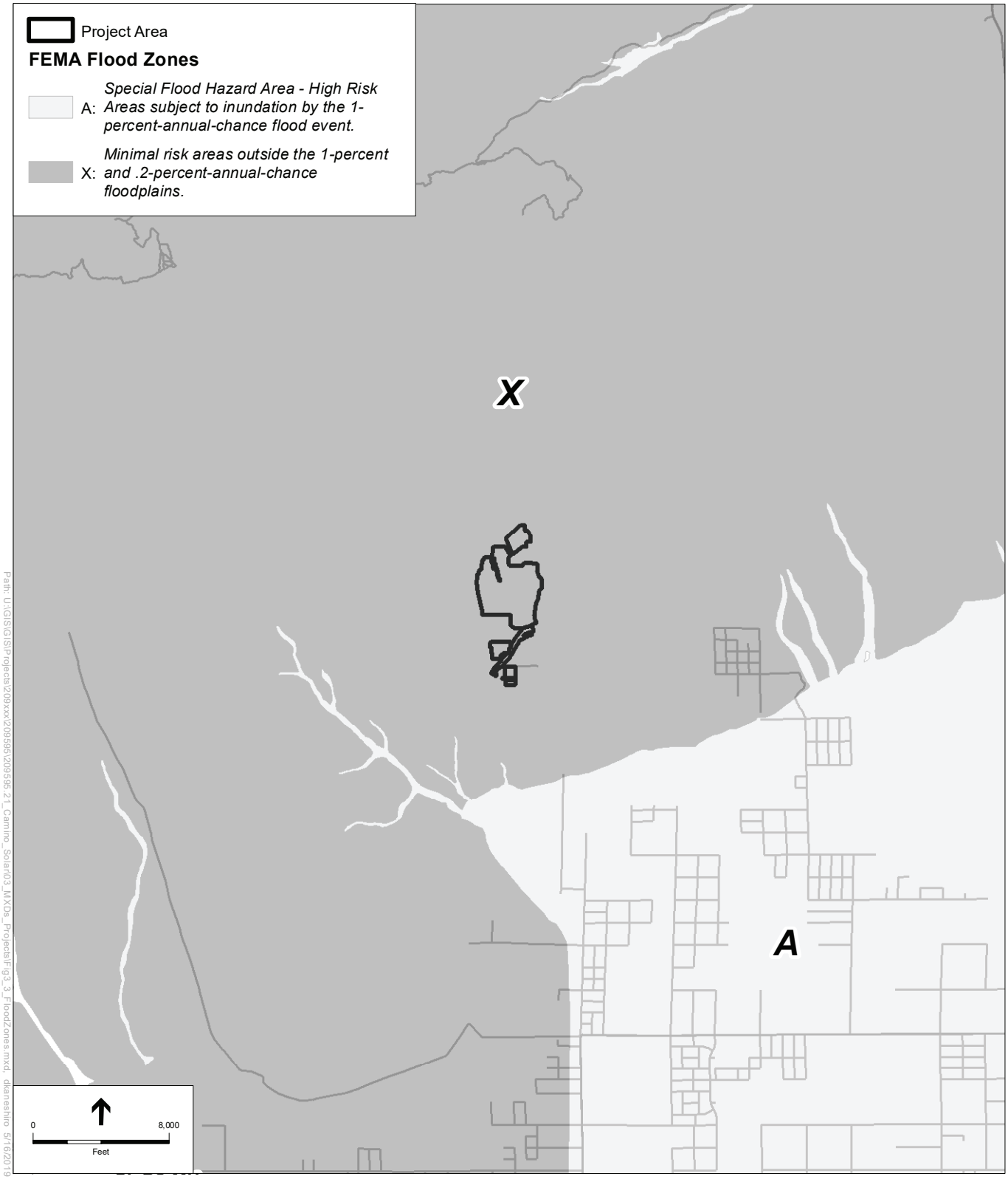


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**Figure 3-3: FLOOD ZONE HAZARDS**

State-designated Alquist-Priolo Earthquake Fault Zones have not been identified on the project site; however, the area is considered to be seismically active with the nearest active fault being Cottonwood Fault, which runs northwest to southeast of the main project area, and traverses the electrical collection corridor north of the battery storage system area from the southern edge of the project site.

The proposed 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 Rosamond substation, located approximately 14.5 miles southeast from the project site, at 3179 35th Street West in the community of Rosamond. The closest KCFD fire station is Station No. 15 (Rosamond), located approximately 14.5 miles southeast of the project site at 3219 35th Street West in the community of Rosamond. The closest hospital to the project site is the Adventist Health Tehachapi Valley Hospital, located at 1100 Magellan Drive, Tehachapi, approximately 13.8 miles north of the project site. The next nearest hospital is Antelope Valley Hospital, in the city of Lancaster, approximately 22.5 miles to the southeast. The closest school to the project site is Tropico Middle School, located approximately 16 miles southeast of the project site in the community of Rosamond.

The project site is not located within the boundaries of an Airport Influence Area as identified in the Kern County Airport Land Use Compatibility Plan. The nearest airport is the Skyotee Ranch Airport, which is for private use only and is located 6.5 miles south of the project site. The project site is located approximately 14 miles west of the Rosamond Skypark, a privately-owned and operated residential skypark; 18 miles northwest of the General William J. Fox Airfield, and 14 miles southeast from the Tehachapi Airport, which is the closest publicly owned airport. SR-138 is located 8 miles south of the project site, and SR-14 is located approximately 15 miles east of the site.

# 3.5 Land Use and Zoning

## Kern County General Plan

The area surrounding the project site is primarily characterized by rural land occupied by suitable uses for rural areas and large-lot low-density residences. Existing development in the project vicinity includes wind and solar energy; rural access roads; rural residences; producing and non-producing water wells; designated areas off-highway vehicle use; cattle ranching, sheep grazing, and maintenance facilities; mining; and planned/existing met towers. Large-lot rural residences are located along Rosamond Boulevard, approximately 5.25 miles southeast of the project site, and along 140th Street, approximately 4.75 miles southeast of the project site. Forest, parkland, and preserve areas in the project site include the Angeles National Forest located in Los Angeles County, approximately 34 miles south; the Desert Pines Wildlife Sanctuary and the Arthur B. Ripley Desert Woodland State Park located in Los Angeles County, approximately 11 miles to the south; and the Antelope Valley California Poppy Reserve located in Los Angeles County, approximately 13.5 miles to the south. There are several existing and permitted solar energy, wind energy, and transmission projects in the region where the project site is located. The RE Garland Solar Project is located immediately adjacent to the project site's eastern boundary, and was approved by the Kern County Board of Supervisors in 2015. An expanded list of existing, approved, and pending projects in the vicinity of the project site is provided in **Table 3-6**, *Cumulative Projects List*. The Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail, or PCT) is 1 -mile northwest of the project boundary. The Los Angeles Aqueduct is south of the project site, along 170th Street West.

The project site is located within the Kern County and, therefore, is subject to the Kern County General Plan. As shown in **Figure 3-4**, *Existing General Plan Designations,* and **Table 3-1**, *Project Site and Surrounding Land Use Designations and Zoning Classifications,* the project site is designated Map Code(s) 8.3 (Extensive Ag - 20-acre min), 8.5 (Resource Management - Minimum 20 Acre Size), 1.1 (State or Federal Land), and 8.3/2.1 (Extensive Ag/Seismic Hazard).

- General Plan Designation 8.3, Extensive Agriculture, 20-acre minimum parcel size. This designation is applicable to the northern part of the project site, and bounds the project site's northern, western, and southwestern edges.
- General Plan Designation 8.5, Resource Management, 20-acre minimum parcel size. This designation is applicable to the southern portion of the project site, and bounds the project site's eastern and southern edges.
- General Plan Designation 1.1, State or Federal Land. This designation is applicable to the BLM-administered lands within the site.
- General Plan Designation 8.3/2.1, Extensive Agriculture/Seismic Hazard, 20-acre minimum parcel size; and seismic hazard combining area. A strip of lands with this designation runs northwest to southeast through the project site; the collector line route passes through this designation.

According to the General Plan, a Specific Plan Required land use designation applies to areas wherein largescale projects have been previously proposed by the project landowner(s). The project site is not located within a Specific Plan area.

The project site is not designated by the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The DOC designates the project site for grazing use and as Natural Vegetation (DOC 2016).

# Kern County Zoning Ordinance

The project site is subject to the provisions of the Kern County Zoning Ordinance and is included within Kern County Agricultural Preserve Number 24 boundary. As shown in **Figure 3-5**, *Existing Zoning Classifications*, the Kern County Zoning Ordinance applies several zoning designations to the project site. The project site zone classifications include; A (Exclusive Agriculture); A WE (A - Wind Energy); A GH (A - Geological Hazard); A GH WE (A - Geological Hazard - Wind Energy); PL RS GH (Platted Lands - Residential Suburban - Geologic Hazard); PL RS (Platted Lands - Residential Suburban); PL RS MH (Platted Lands - Residential Suburban - Mobile home); and OS (Open Space). The BLM-administered parcel is zoned as OS (Open Space). Pursuant to Sections 19.12.020, 19.12.030, 19.64.020, 19.64.030, 19.68.020, and 19.68.030 of Kern County Zoning Ordinance, solar facilities are permitted within the A, A WE, and A GH WE zoning districts with approval of a Conditional Use Permit (CUP). Pursuant to Section 19.44.020 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for OS. No lands within the project site are subject to a Williamson Act Land Use contract.

The Kern County Zoning Ordinance includes structure height limitations that are designated by the U.S. military for sites occurring within the vicinity of a military flight zone. To ensure that projects within Kern County do not conflict with military flight test pathways, Kern County adopted an ordinance that restricts the height of structures within these pathways. According to the Kern County Zoning Ordinance, Figure 19.08.160, all structures within the project's area of T10N/R15W MDBM, are to be reviewed by the military only if a structure or structures are over 500 feet high.

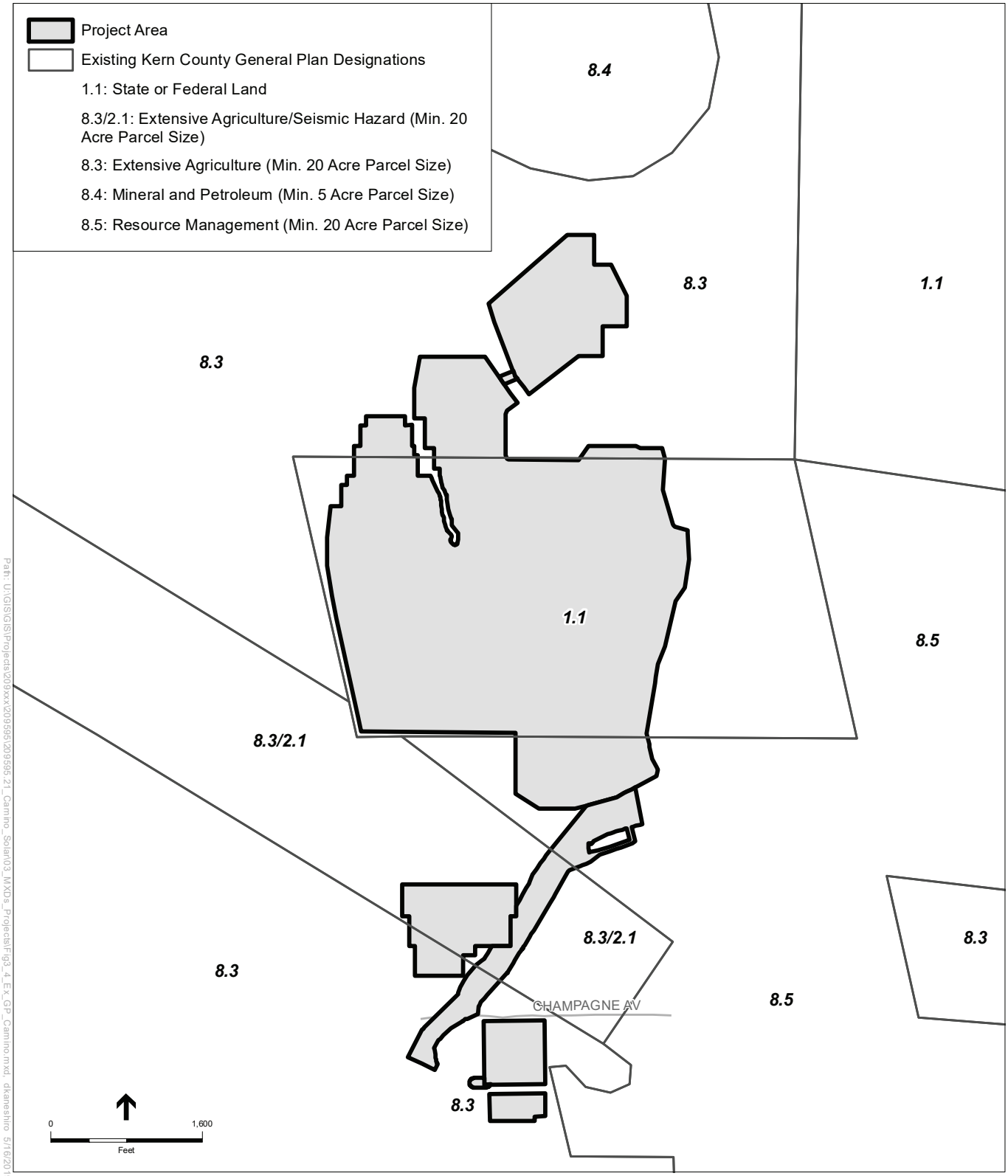


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**Figure 3-4: EXISTING KERN COUNTY GENERAL PLAN DESIGNATIONS**

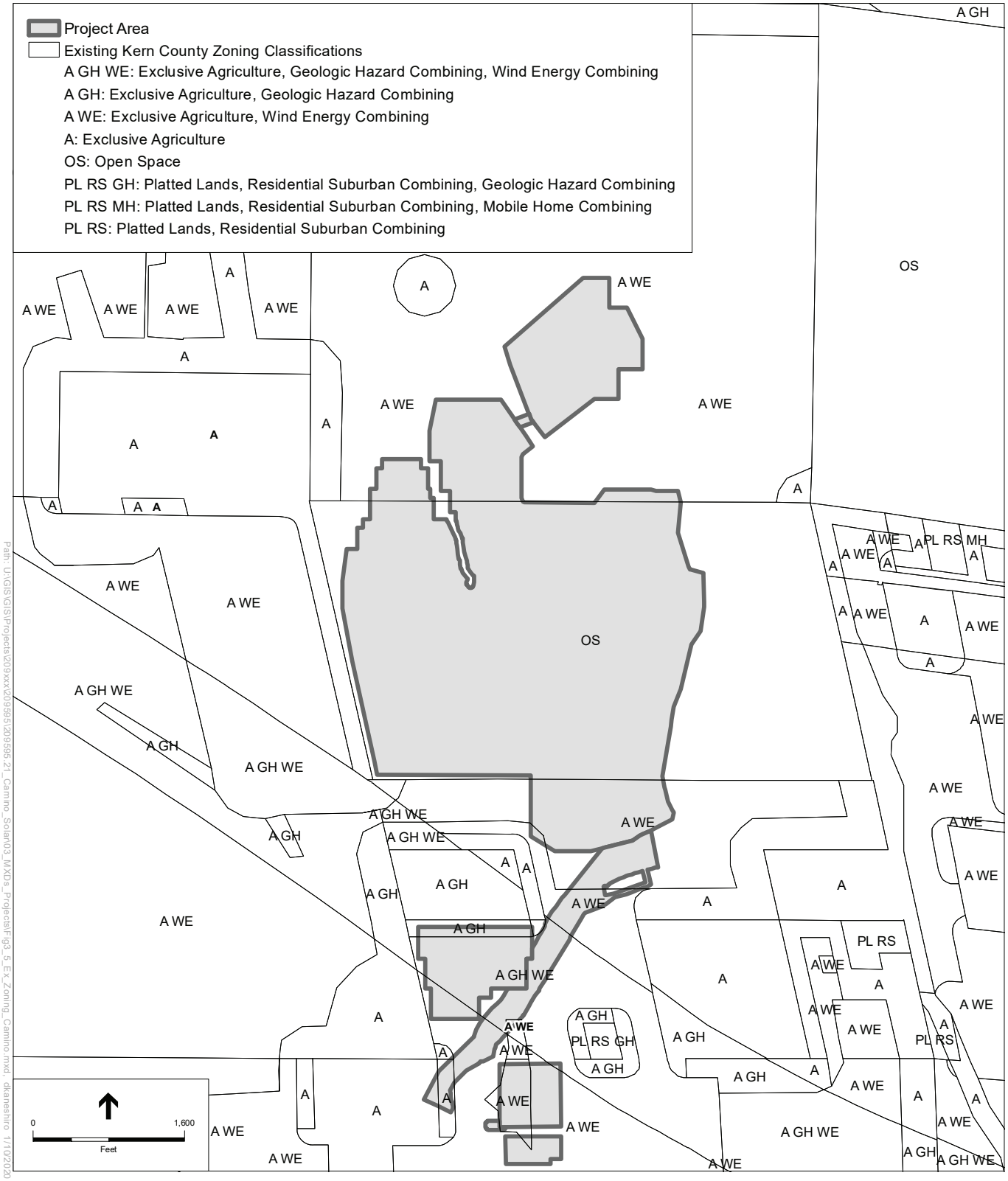


**Figure 3-5: EXISTING KERN COUNTY ZONING CLASSIFICATIONS**

# 3.6 Project Overview

The proposed project would include development of a solar facility and associated infrastructure with the capacity to generate a maximum of 44 MW of renewable electric energy and a battery storage system to store and release a portion of the electricity generated. A new 34.5 kV underground collector line would be constructed on private land between the Camino Solar and energy storage system and the Manzana Project substation, where transformers would increase the voltage from 34.5 kV to 220 kV. Then energy would be transferred to the SCE Whirlwind substation using the existing Manzana Project 230 kV gen--tie line.

The solar facilities would utilize PV technology and consist of solar arrays mounted on either fixed or tracking structures mounted to vertical posts. The site boundaries for the proposed project is shown in Figure 3-2, *Project Site*.

The project proponent has a CUP application to Kern County to facilitate the construction and operation of the proposed project. The proposed project would consist of approximately 180,000 solar panels arranged in a grid-pattern over the project site. Further, the proposed project would share the existing facilities that support the operations of the existing Manzana Project, and thus, would not require the construction of additional operations and maintenance (O&M) buildings.

The project's facilities would include solar panels/modules, associated support structures such as pile foundations, and trackers systems, inverters, a battery storage system, an existing substation, internal service roads, telecommunication equipment, including underground and overhead fiber optics, and underground electrical collection systems. Underground cables 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 substation. Overhead circuits could be used to avoid environmentally sensitive areas or other constraints that are inherent to the project site. A buried 34.5 kV collector system would connect to the transformers of each array. the solar arrays would then transfer electricity to the Manzana Project substation through a new approximately 0.75-mile-long underground collector line across private lands that daylights at a single riser pole and connects to the existing aboveground Manzana Project transmission line at the interconnection with the Manzana substation. The 0underground collector line will be sited within a 25-acre corridor. A temporary work area up to 100 feet wide will be used during installation of the collector system, which will impact approximately 9 acres within the corridor. The site boundaries for the facility are shown in Figure 3-2, *Project Site*.

The proposed project would include the following components, which are described in more detail further below:

- **Solar PV Generating Facilities and Solar Modules:** Installation of up to a maximum of 44 MW of PV modules made of thin film or polycrystalline silicon material covered by glass, mounted on a galvanized metal fixed-tilt or single-axis racking system and connected to inverters.
- **Energy Storage Facility:** Installation of an energy storage system and appurtenances that would provide energy storage capacity for the electric grid.
- **Substations:** No substations would be constructed as part of the proposed project. Rather, the project would use the existing Manzana Project and Whirlwind substations with minor modifications to add circuit breakers, disconnect switches, metering and protection equipment, main step-up transformers, and other electrical equipment.

- **Electrical Collector System and Inverters:** Underground medium voltage collection systems throughout the solar facilities and overhead medium voltage collection systems. The collection systems would be aggregated at multiple circuit breakers or medium voltage switchgear within the project facilities, leading to the underground 34.5 kV collector line and then the Manzana substation.
- **Site Access and Security:** Onsite access roads and perimeter security fencing.

The projected spatial requirements for all key project components are presented in **Table 3-4**.

**TABLE 3-4: PROJECT SPATIAL REQUIREMENTS**

| | Estimated Extent | | |
|---|---|---|---|
| **Component** | **Total** | **BLM** | **Private** |
| Entire Project Area | 383 acres | 233 acres | 150 acres |
| Fenced Area | 351 acres | 230 acres | 121 acres |
| Solar Array Fields and Internal Roads | 337 acres | 230 acres | 107 acres |
| Battery Storage | 10 acres | -- | 10 acres |
| Operations and Maintenance Facility (existing) | 4 acres | -- | 4 acres |
| Electrical Collection Corridor* | 0.75 miles / 25 acres* | -- | 0.75 miles / 25 acres* |
| Rerouted BLM Road | 1.1 miles / 6 acres | 0.6 miles / 3 acres | 0.5 miles / 3 acres |

**Note:**
Each measurement calculated independently and rounded to the nearest acre, sum of line items in the table may differ from subtotals presented due to rounding.
* The corridor is wider than the underground electrical collector line which will be sited within it.

# 3.7 Project Characteristics

### *Solar PV Generating Facilities and Solar Modules*

The proposed project would use high-efficiency commercially available solar PV modules that would generate electricity by converting sunlight into direct current (DC) electrical energy. The PV modules would be protected by tempered, anti-reflective glass, and would have factory-installed "quick connect" wire connectors. The PV modules can be mounted together in different configurations (also referred to as arrays or blocks) depending on the equipment type and topography. The area required for each array depends on the module technology, spacing, mounting equipment, and other design criteria, which are subject to change during final design.

The proposed project would be capable of generating up to 44 MW using about 180,000 PV modules. Individual PV modules would be arranged in rows on a central single-axis tracking system that adjusts tilt and solar collection. A single-axis tracking system optimizes electricity production by rotating the PV modules to follow the path of the sun throughout the day. The central axis of the tracking structure would be oriented north to south and would rotate the PV modules east to west to limit self-shading between rows.

The drive unit for the tracking system can control a single row or multiple rows of PV modules through a series of mechanical linkages and gearboxes. As the solar modules tilt throughout the day, the height of their top edges would shift accordingly (i.e., between 4 feet and 7 feet high). Each tracker system supports multiple PV modules mounted on a metal framework structure. The structure would be specifically designed to withstand wind, snow, and seismic loads anticipated at the site.

The rows of PV modules would be arranged in arrays depending on site conditions but would typically be made up of 30 rows with 88 PV modules in each row. The DC generated by the PV modules would be transmitted through electrical cables to an inverter associated with each array that would convert the electricity from DC to alternating current (AC). The AC would be transferred to an adjacent oil-filled, step-up transformer that would increase the output voltage from the inverter (315 V) to the desired substation feed voltage (34.5 kV). A buried 34.5-kV collector line would run between transformers associated with each array. The inverter and transformer for each array would be installed on a shared concrete pad. All transformers would use only non-polychlorinated biphenyl (non-PCB) oils.

In addition to the existing roads that provide access to the project area, within the project site, gravel-surface access roads would be constructed within the fenced solar area. These permanent access roads would be about 20 feet wide and provide access to each inverter. 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.

### *Energy Storage Facility*

An energy storage facility component would be added next to the existing Manzana Project substation on private lands. The energy storage facility would be composed of a series of batteries to store power generated at the facility, allowing transfer of power to the electrical grid when needed. The energy storage infrastructure would be approximately 2 acres in size, entirely on private land. It would be sited within a 10-acre area north of the existing Manzana Project O&M facility, allowing for the micro-siting to avoid sensitive resources. No expansions to the existing Manzana Project substation, Manzana Project gen-tie transmission line, or the Manzana Project substation would be required to accommodate the solar arrays or energy storage system.

### *Transmission Lines, Substation, Collector line, and Access Roads*

The proposed project would use the existing transmission line, substation, and site access roads on private land associated with the Manzana Project. A new underground 34.5 kV collector line would be constructed on private land between the Camino Project site and the Manzana substation, where transformers would increase the voltage with which the energy is being transmitted from 34.5 kV to 220 kV. Then energy would be transferred to the Whirlwind substation using the existing Manzana Wind 220 kV gen-tie line. This existing infrastructure (i.e., the Manzana substation, 220 kV gen-tie line, and Whirlwind substation) has adequate capacity to take on the additional 44 MW that would be generated by the project without modifications.

Existing access roads on the private land associated with adjacent wind energy generating projects would be used to access the project site. The primary access route to the project would be from the south, following

170th Street West northward from the intersection with Rosamond Boulevard, and then along private access roads entitled for the Manzana, Pacific Wind, or Catalina Projects.

Within the project site, access roads would be constructed to provide access to each inverter. Access roads between the solar fields would be constructed of compacted native soil to prevent rock damage to panels from vehicle traffic. Any additional gravel or other soil would be purchased from an existing permitted commercial provider. As needed, water or a stabilizing agent such as magnesium chloride or lignin may be used on the dirt roadways to control dust around the solar fields. All new roads within the project site would avoid streambed crossings. Final access road alignments would depend upon the final placement of the solar arrays and site conditions.

The BLM-administered portion of the project site is crossed by an existing unimproved road that provides north-south access to a residence and a calcite mine located on private land north of the proposed project. Access would be maintained by constructing a new road around the eastern edge of the project boundary. The rerouted road would be constructed to match the width and surface type (i.e., compacted dirt) of the existing road.

No ancillary facilities for administration or equipment storage would be constructed as part of the proposed project. The proposed project would share the existing facilities that support the operations of the Manzana and/or Pacific Wind Projects. The proposed project would include maintenance personnel that are expected to visit the project site several times per year for routine maintenance; the PV modules may be cleaned up to nine times per year, but will be cleaned only on an as-needed basis, depending on site events and soiling rates.

### *Generation-Tie Line and Interconnection with Statewide Grid*

The proposed project would use the existing interconnection agreement and interconnection facilities from the adjacent Manzana Project, as there is sufficient capacity within the interconnection agreement to accommodate the proposed project. Interconnection studies with the California Independent System Operator (CAISO) have been completed for the proposed project. The Manzana Project has executed interconnection agreements with Southern California Edison and CAISO.

The Supervisory Control and Data Acquisition (SCADA) system is critical to the CAISO and SCE utility interconnection, and for the proper operation and maintenance of the proposed project, which utilizes propriety software, a fiber optic transmission system, a telephone, radio and/or microwave communications network, and other means of communication such as radio-links and phase loop communication systems. The SCADA system functions as a remote start, stop, reset, and tag out for facility, thus minimizing the manpower and site diagnostic information generated from the panels. The SCADA system would also control the substations allowing for fully centralized operation of the proposed project to meet all CAISO and utility interconnection requirements.

### *Site Security and Fencing*

There is currently no legal public access to the BLM parcel because it is surrounded by private land. The project site would be fenced as necessary to restrict public access during construction and operations. Chain-link security fencing would be installed around the perimeter of the solar arrays and other areas requiring controlled access. The security fence would be approximately 6 feet tall, topped with approximately 1 foot of barbed wire (three strands) mounted on 45-degree extension arms. The fence posts

may be set in concrete. The boundary of the security fence is depicted in **Figure 3-6**, *Site Security and Fencing*. Security cameras may also be installed at the project site and be monitored at an offsite location. Controlled access gates would be located at the entrances to the facility. Site access gates would be a swing or rolling type. Access through the main gate would be controlled to prevent unaccompanied visitors from accessing the facility. All facility personnel, contractors, agency personnel, and visitors would be logged in and out of the facility at the main office during normal business hours. Visitors and non-project employees would be allowed entry only with approval from a staff member at the facility.

# Construction

## Schedule and Workforce

It is anticipated that permitting and development of the proposed project would take place in 2019 and construction would begin in late 2020. Construction of the proposed project, from mobilization at the site to final completion would last for approximately 6 to 9 months. No construction phasing is proposed. Construction would proceed following receipt of all permits and agency approvals and would include the following activities, listed in approximate sequential order (some construction activities would occur simultaneously):

- Surveying, staking, and installation of erosion control measures
- Access road construction within the site
- Site grading
- Trenching and installation of underground electrical system in solar field
- Assembling array foundation/install solar array fields
- Constructing the collector line between the solar field and the Manzana substation
- Testing and commissioning
- Restoring temporarily disturbed areas

The onsite construction workforce is expected to peak at up to 200 individuals. It is anticipated that the construction workforce would commute to the project site each day from local communities and report to the designated construction staging yard at the Manzana Project O&M building prior to the beginning of each work day. Construction staff not drawn from the local labor pool would stay in local hotels in Rosamond, Mojave, Lancaster, or other local communities. During construction, workers would park in the staging area at the Manzana Project O&M yard. Construction vehicles and equipment would also be stored in this area when not in use. It is anticipated that the employees would use SR-14 by way of Rosamond Boulevard from the east, and then along 170th Street and access roads entitled for the Manzana, Pacific Wind, and Catalina Projects.

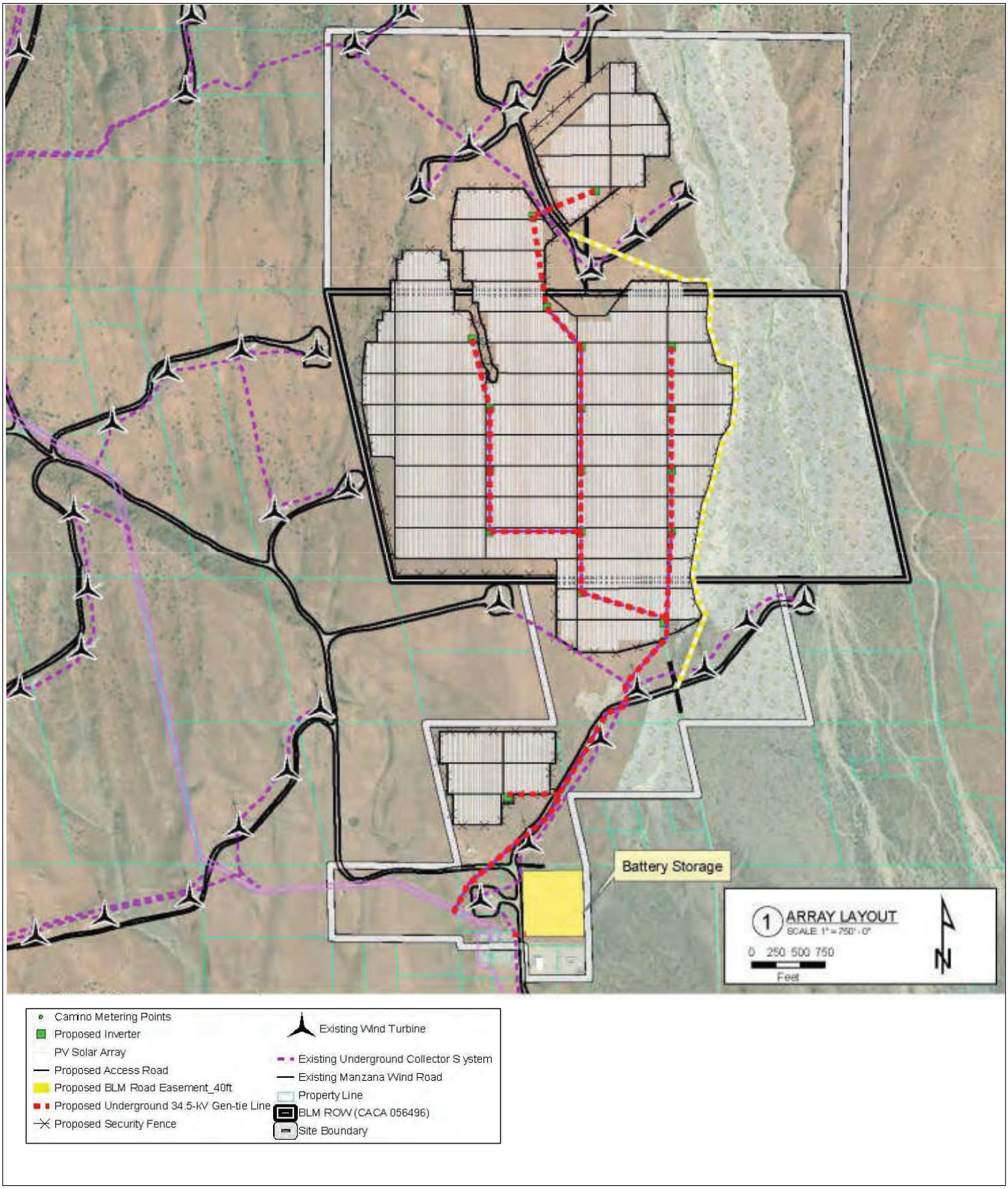


**Figure 3.6: SITE SECURITY AND FENCING**

Trucks transporting facility components and other construction materials could use SR-138 (Avenue D) as an alternative route to avoid congested traffic conditions in Rosamond. SR-138 can be accessed from either Interstate 5 from the west, or SR-14 from the east, to 170th Street West. Materials would be staged in material storage or laydown yards located in the adjacent Manzana and/or Pacific Wind Projects. Material deliveries would be staged to minimize storage requirements onsite and to avoid peaks in delivery frequency. No permanent or major road improvements would be needed to accommodate delivery and construction traffic along the public roads and highways, as the roads have already been sufficiently improved to allow the construction of the wind energy projects surrounding the proposed project. Transportation and construction contractors would obtain all necessary permits for transportation-related elements of the proposed project from U.S. Department of Transportation and California Department of Transportation. Drivers would follow posted speed limits or other reduced speeds if appropriate for safety.

The proposed project would be constructed by several, specialized construction contractors. Construction would generally occur between 6 a.m. and 10 p.m., 5 or 6 days per week, for the duration of construction. Additional hours might be necessary to make up schedule deficiencies or to complete critical construction activities. 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).

Construction of the proposed project would also include the creation of access roads to the proposed panel locations, construction of solar panels, and construction of 0.75-mile-long underground 34.5 kV collector line. Restoration of disturbed areas, temporary roadways, and equipment laydown sites that are not required as part of the ongoing operating of the facility would be revegetated. Staging areas may be required for material handling, temporary storage, and other staging activities. **Table 3-5**, *Solar PV Construction Activity, Duration, Equipment, and Workers*, depicts the construction activities, duration, equipment, and workers by phase.

**TABLE 3-5: SOLAR PV CONSTRUCTION ACTIVITY, DURATION, EQUIPMENT, AND WORKERS**

| Activity | Duration (Days) | Equipment |
|---|---|---|
| Move On | 5 | 1 Graders<br>2 Off-Highway Trucks<br>5 Carts/ATVs<br>1 Rubber Tired Dozers<br>1 Scrapers<br>1 Tractors/Loaders/Backhoes |
| Site Preparation & Grading | 50 | 1 Grader<br>1 Roller<br>2 Scrapers<br>1 Rubber Tired Dozers<br>3 Off-Highway Trucks<br>5 Carts/ATVs<br>2 Tractors/Loaders/Backhoes |
| Internal Roads Construction | 50 | 2 Graders<br>1 Scrapers<br>1 Excavator<br>1 Dozers<br>3 Off-Highway Trucks<br>5 Carts/ATVs<br>1 Rollers<br>3 Tractors/Loaders/Backhoes |
| Solar Array & Collector Line Construction | 150 | 1 Crane<br>1 Forklift<br>1 Graders<br>4 Post Drivers<br>2 Off-Highway Trucks<br>1 Trencher<br>1 Other Construction Equipment<br>1 Excavator<br>1 Skid Steer<br>5 Carts/ATVs<br>2 Tractors/Loaders/Backhoes |
| Battery Storage Construction | 20 | 2 Forklifts<br>1 Grader<br>1 Rubber Tired Dozer<br>1 Off-Highway Trucks<br>5 Carts/ATVs<br>2 Tractors/Loaders/Backhoes<br>1 Trenchers |

## Site Grading and Earthwork

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 Kern County zoning codes and 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.

Initial work on the project site would involve preparing the land for installation of arrays, energy storage facility, related infrastructure, access driveways, and temporary construction staging areas. The construction contractor would be required to incorporate BMPs consistent with the Kern County zoning ordinance and with guidelines provided in the *California Storm Water Best Management Practice Handbooks: Construction*, including the preparation of a Storm Water Pollution Prevention Plan (SWPPP) and a Soil Erosion and Sedimentation Control Plan in order to reduce potential soil impacts related to construction of the proposed project. Sediment and erosion control measures would be installed before major ground disturbing activities as described in the SWPPP. Stabilized construction entrance and exits would be installed at driveways to reduce tracking of sediment onto adjacent public roadways.

Site preparation would be consistent with Kern County's 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, utilizing "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 vehicles. Certain access roads may also require the use of aggregate of 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.

It is anticipated that project construction would begin in in late 2020 and occur over a period of 6 to 9 months. Any construction activities that should take place in the rainy season would require supplemental erosion measures to be implemented, including, but not limited to, the following:

- Mulching
- Geotextiles and mats
- Earth dikes
- Temporary drains and gullies
- Silt fence
- Straw bale barriers
- Sandbag barrier
- Brush or rock filter
- Sediment trap

Trenching would be required for placement of underground electrical and communications 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 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.

Construction equipment would be turned off when not in use. The construction contractor would ensure that all construction and grading equipment is properly maintained. All vehicles and compressors would utilize exhaust mufflers and engine enclosure covers (as designed by the manufacturer) at all times.

## 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 are typically spaced 10 feet apart and installed to a revealed height of approximately 4 feet above grade. Once the piles have been installed, the horizontal cross-members of the single-axle tracking system and associated motors would be placed and secured. A galvanized metal racking system, which holds the PV modules in the correct position for maximum capture of solar insolation, would then be field assembled and attached to the horizontal cross members. The arrays would consist of either a fixed mount system or a single-axis tracking system.

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 proposed mounting system chosen for installation. Final concrete specifications would be determined during detailed design engineering and geotechnical evaluation of ground conditions. Concrete may be produced on the project site and would be poured throughout the site by truck, or purchased from an offsite supplier and trucked into 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 upgrades would occur 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. 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, truck wheel washing, and grading across the site. Dust control water may be used for construction traffic ingress and egress of onsite construction vehicle equipment traffic, and for the construction of the solar equipment. Potable water for workers would be supplied from the existing Manzana Project site. A sanitary water supply would not be required during construction, as sanitation facilities at the Manzana and/or Pacific Wind Projects would be used.

During construction the water used would most likely come from an existing well within 5 miles and trucked to the project site. The project proponent is currently negotiating with water providers for water service during construction. An adjacent well owned by the California Portland Company property was used during the construction of the Manzana Wind Power Project and may also be used for construction of the proposed project if the owners are in agreement. Other water sources may also be used including water

delivery by tanker truck, or development of wells on nearby private lands within the Manzana Wind Power Project. See Water Supplement Assessment located in Appendix I-3 for more information.

## 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, 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. 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. Most waste generated during operations would be nonhazardous. Sanitation facilities at the Manzana and/or Pacific Wind Projects would be used, and the proposed project would not therefore generate any sewage or sanitary waste.

## Hazardous Materials and Waste

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, pesticides, 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, material safety data sheets for all applicable materials present at the site would be made readily available to onsite personnel.

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.

# Operation and Maintenance Activities

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. As previously discussed, the existing O&M facility and staff for the Manzana Project would be utilized for the proposed project. Up to three additional staff may be required to operate and maintain the proposed project. Maintenance of the proposed project would require staff for panel washing, electrical work, and other activities; however, these staff will most likely be contractors. The existing O&M facility is located at the southern edge of the proposed project, and may be used as a laydown

area and for personnel support during construction, and no updates to the O&M building, yard, or parking area would be made for the proposed project. There are no other structures on the site.

## Electrical Supply

The proposed project would require power for the electrical enclosures, substation equipment, tracker motors, associated structures, and for plant lighting and security, which may be provided by the project's electrical generation or supplied by the local power provider. The existing facilities (O&M buildings, Manzana Project substation, and Whirlwind Substation), would not require additional power beyond what is currently in use.

## Operations Water Use

During project O&M, water would be needed to occasionally clean the panels. The panels would be cleaned using techniques that could include robotic methods and require about 11,000 gallons of water to clean all the panels. Panels would be cleaned only on an as-needed basis, depending on site events and soiling rates. Panel washing frequency is not expected to exceed nine times per year, and the annual water need for cleaning could range up to 99,000 gallons, or about 0.27 acre-foot of water. The water used for panel cleaning is not anticipated to require disposal due to the extremely high evaporation rate at the site, which would cause the waste water to likely evaporate before it could run off or be collected for transport offsite.

## Solid and Nonhazardous Waste

The proposed 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 wastes, 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.

## Hazards and Hazardous Materials

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

The proposed project would be fenced to help prevent access by the public. Gates would be installed at the roads entering the project site. 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.

The proposed 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 to avoid impacts to air traffic. 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 Kern County requirements.

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.

Fuels and lubricants used in operations would be subject to the Spill Prevention, Containment, and Countermeasure Plan to be prepared for the proposed project. Solid waste, if generated in operations, would be subject to the Material Disposal and Solid Waste Management Plan to be prepared for the proposed project. Shipping materials, construction waste, and other general solid wastes would be separated for recycling where possible/available.

## Security and Lighting

The proposed project would be fenced by a 6-foot high chain link fence with 1-foot of barbed wire (three strands) mounted on 45-degree extension arms installed around the perimeter of the facility to help prevent access by the public. The boundary of the security fence is depicted in Figure 3-6, *Site Security and Fencing*. 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. During operations, the fencing design will allow for wildlife movement as appropriate.

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.

# Decommissioning

At the end of the proposed project's operational term, the project proponent may determine that the project site should be decommissioned and deconstructed, or it may seek an extension or revision of its CUP. Because the PV arrays supporting equipment sit on the surface of the land, when the arrays are removed after the proposed project's productive lifetime, the land would be largely unaltered from its natural state. The project proponent would work with the County to put an agreement in place that would ensure the decommissioning of the project site after its productive lifetime. The proposed project would follow applicable disposal regulations at the time of decommissioning to ensure the collection and recycling of modules is maximized to the extent feasible to minimize waste.

The proposed project has an anticipated operational life of approximately 35 years, after which the project proponent may choose to update site technology and re-commission, or decommission 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, sell power without a Power Purchase Agreement, or 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-related structures would be removed. 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, equipment on the inverter pads, and related equipment and concrete pads. The Manzana Project substation would remain onsite and would not be removed, but used as part of the utility services 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 offsite to be recycled or disposed of at an appropriately licensed disposal facility. Removal of the solar modules would include removal of the racks on which the solar panels are attached, and their placement in secure transport crates and a trailer for storage, for ultimate transportation to another facility. Once the solar modules are removed, the racks would be disassembled, and the structures supporting the racks would be removed. Site infrastructure would be removed, including fences, and concrete pads that may support the inverters, transformers and related equipment. The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried with the equipment being used. The fence and gates would be removed, and all materials would be recycled to the extent feasible. The area would be thoroughly cleaned and all debris removed. Wherever feasible and allowable at the receiving recycling facility, the decommissioned project components would be recycled to minimize disposal in landfills.

# 3.8 Entitlements Required

The anticipated approvals needed for the proposed project include consideration and certification of the Final EIR/EA and approval of Kern County CUP No. 7, Map 216. 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:

## Kern County

- Consideration and certification of Final EIR/EA with appropriate Findings (Sections 15091 and 15093 of the California Environmental Quality Act (CEQA *Guidelines*) and Mitigation Monitoring Program, as applicable, by the Kern County Planning Commission and/or Board of Supervisors.
- Approval of CUP No. 7, Map 216, for construction and operation of a 44 MW solar project.
- Kern County construction, grading, and building permits.

## Public Lands Parcel

As noted above, the proposed project consists of all privately-owned land, with the exception of 233-acres of one parcel administered by the BLM. As with the rest of the project site, the BLM-administered parcel is vacant and undeveloped but was used in the past for grazing contracts with local ranchers. The BLM is considered a co-lead agency and must rely on the EA presented in Chapter 11 of this EIR/EA to issue its own findings and Decision Record. Anticipated development on the BLM parcel would include PV panels, inverters, electrical lines, internal roads, safety lighting, and fencing. These components are described in more detail in Section 3.7, *Project Characteristics*, above.

## Other Responsible Agency Entitlements

- BLM adoption of an EA as the lead agency under NEPA.
- BLM right-of-way grant to construct, operate, and decommission a 44 MW solar project partially located on 233 acres of BLM-administered land.
- Regional Water Quality Control Board Section 401 certification and waste discharge requirements, if required.

# 3.9 Relationship of the Project to Other Energy Projects

The proposed project is being developed independently of other approved or proposed solar projects in the county. If approved, the project facilities would be subject to their own use permits, conditions of approval, interconnection agreements, and power purchase agreements. Kern County understands that the project facilities would be built and operated independently of any other energy project, even if owned by a common parent.

The proximity of the proposed project to the Manzana Project means that the proposed project can share existing infrastructure and thereby reduce the overall project footprint and associated environmental impacts. The proposed project's electrical collector line would travel approximately 0.75 mile underground to interconnect with the Manzana substation, and from there would use the existing generation tie-line to Southern California Edison's existing Whirlwind substation. The privately held lands at the project site are currently under lease agreement for the Manzana Project.

# 3.10 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 reasonably 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 Draft EIR/EA. 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 3-6,** *Cumulative Projects List*. **Figure 3-7**, *Cumulative Projects Map – East Kern County* shows the approximate location of the proposed solar projects in Kern County and Los Angeles County considered in the cumulative analysis.

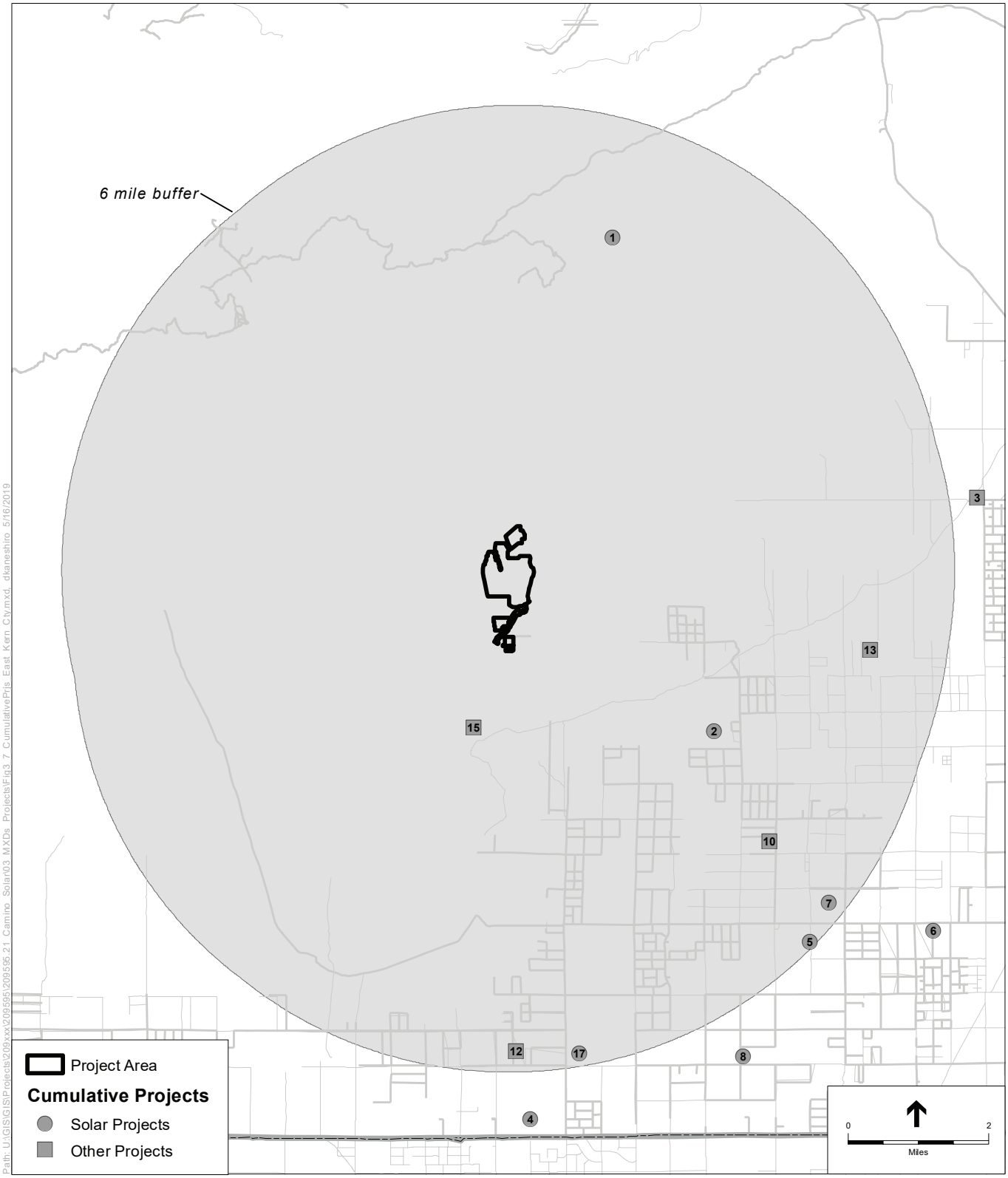


**Figure 3-7: CUMULATIVE PROJECTS MAP EAST KERN COUNTY**

**TABLE 3-6: CUMULATIVE PROJECTS LIST**

| Project Name/ CASE ID | Project Location | Project Description | Case Type | Request | Project Site APN | Acreage | Project Status |
|---|---|---|---|---|---|---|---|
| **EAST KERN COUNTY PROJECTS – FIGURE 3-7** | | | | | | | |
| **SOLAR PROJECTS** | | | | | | | |
| 1. David Firestone | 5 miles west of Willow Springs Rd | Solar | X | 20 MW Solar | 400-053-02 | 160 | X |
| 2. EDF Renewable Development Inc.- Richard Miller | W. of Rosamond, Southwest of SR-58 | Solar | X | Commercial (100 MW) Solar Photovoltaic Facility | 358-021-04 | 2,250 | X |
| 3. EDF Renewable Energy (enXco) / Catalina Solar 2 LL | Backus Rd - w of Tech Will Springs | Relocation of 40 megawatts to preserve north-south trending ephemeral blue-line drainages for storm water flows and wildlife movement Wind200 MW and Solar 150 MW | CUP, GPA, ZCC | Original Project: Catalina 350 MW Wind & Solar Project Current Request: Catalina Solar 2 to amend<br><br>Catalina 350 MW Wind & Solar Project. This CUP is for the solar facility.<br><br>Catalina Wind & Solar Project (This CUP is for the temporary batch plants) | 474-131-02 | 6,739 Wind and 761.4 Solar | Finalized |
| 4. Kingbird Solar | Northwest corner of 170th<br>Street West and Avenue A | 40 MW solar facility | SPA, ZCC, CUP | 3/ZCC 16 /CUP<br>9 Map 233 | 261-196-07 | 324 acres | Approved October 2014 |

**TABLE 3-6: CUMULATIVE PROJECTS LIST**

| Project Name/ CASE ID | Project Location | Project Description | Case Type | Request | Project Site APN | Acreage | Project Status |
|---|---|---|---|---|---|---|---|
| 5. Mon-Wei Lin | SWC Rosamond Blvd & 130th St. West | Solar | CUP | Solar facility | 359-020-05 | 321.22 | X |
| 6. Renewable Resources/Ru Pal Patel | Between 115 St. West & 190 St. West | Solar | Vacation | Vacation of public access easements in conjunction with solar project | 359-011-0 | X | X |
| 7. Rosamond Solar, LLC by First Solar/Rosamond Solar, LLC | Two sites; the larger site is located north of the intersection of Rosamond Boulevard and 130th Street West. The smaller site is located south of the intersection of Rosamond Boulevard and 110th Street West | 150 MW solar facility | GPA 14, ZCC 31, CUP 25, Map 232 | Solar Facility | Info unavailable | 1,177 | Approved October 2014 |
| 8. Rosamond Solar by SGS Antelope Valley | Portion of Sec 29, 32 and 33 of Sec 9/14 | 120 MW solar facility | GPA, ZCC, CUP | GPA, ZCC and CUP for a PV solar facility | 359-350-01 | 960 acres | Approved 11/9/2010 |
| 9. Willow Springs Solar Array by First Solar | Northwest of Rosamond | 160 MW solar facility | GPA 15, ZCC 32, CUP 26, Map 232 | GPA , ZCC, CUP for a PV solar facility, ZCC from SP to A | 359-052-02, 359-031-02, 03, 04, 05, 06, 15, 359-032-01, 17 | 1,402 acres | Approved March 2016 |
| **OTHER NON-SOLAR PROJECTS** | | | | | | | |
| 10. Bruce Hatchett | 14070 Lodestar Avenue, Rosemond | Wind Turbine Tower | X | Wind turbine on 100-foot tower | 358-132-07 | 4.99 | X |
| 11. Cameron Canyon Ridgeline Wind Project by Jon Lantz | South of Cameron Canyon Road. | GPA to accommodate small wind energy project; zone change to accommodate small wind energy project | GPA and ZCC | GPA and ZCC for small wind energy project | 237-201-10 | 20.53 acres | Active |

**TABLE 3-6: CUMULATIVE PROJECTS LIST**

| Project Name/ CASE ID | Project Location | Project Description | Case Type | Request | Project Site APN | Acreage | Project Status |
|---|---|---|---|---|---|---|---|
| 12. Dennis Harper | Gaskell and 170th St West | X | X | Easement vacations | 261-194-36 | X | X |
| 13. EDF Renewable Energy/BAR 13 Solar | 125th Street W. Champagne Ave | Development of 128 MW solar with energy storage, metro tower, and temporary concrete batch plants | CUPs | Installation of microwave/communication tower with associated uses within a fenced yard | 474-131-03 | 38.58 | X |
| 14. McDaniel, Lowell by Landmark Surveying | 2 miles S of Cameron Cyn & Hwy 58 | Lot Line Adjustment | Zone Modification | Lot size | 237-241-08 | X | X |
| 15. Pacific Wind/ENXCO Development Corp | Intersection of Rosamond Blvd & 170th W | Solar | CUP | 177- and 277-foot setbacks from APN boundary & public access easements | 261-014-15 | X | X |
| 16. Renewable Resources Group Holdings | Rosamond | Solar | GPA, CUP, ZCC | 650 Megawatt Solar | 359-152-01, etcetera | 5,698 | Approved |
| 17. WDS CAL II LLC | AVSP | Solar | X | Street vacations for Sunpower Corporation Project | 261-193-15, etcetera | X | X |

Section 4.1
# Aesthetics

## 4.1.1 Introduction

This section of the EIR/EA discusses impacts associated with the potential for the proposed project to degrade the existing visual character or quality of the project site (Camino Solar Project) 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 relative to important visual features. Visual simulations were created for various views of the project site (VisionScape 2019) and are located in Appendix B of this EIR/EA. The terms and concepts in the discussion below are used to describe and assess the aesthetic setting and impacts from the proposed 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 or may not occur.

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

**Potentially sensitive viewpoints –** These are viewpoints from which project impacts are assessed. They typically include scenic vistas, scenic highways, residential views, and views from public parks, recreational areas, and culturally important locations from which the project could potentially be visible.

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

**Key Observation Point (KOP) –** One or a series of points on a travel route or at a sensitive use area, such as a public recreational space, where the view of a project would be the most revealing.

**Scenic vista** – An area that is designated, signed and accessible to the public for the express purposes of viewing and sightseeing. This includes any such areas 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, commercial, military, and industrial areas. Viewer activities can range from a circumstance that encourages a viewer to observe the surroundings more closely (such as recreational activities), to discouraging close observation (such as commuting in heavy traffic). Viewers from public parks, recreational trails, and culturally important sites can have high visual sensitivities; therefore, such locations are often 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 0.25 mile away, the middleground zone includes areas 0.25 mile to 3 miles away, and the background zone includes areas beyond 3 miles (FHWA 1981).

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 (the relative size of the object in relation to the viewer). When the same object is viewed at background distances, details may be imperceptible but overall forms of terrain and vegetation are evident, and the horizon and skyline are dominant. In the middleground, some detail is evident 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.

**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 recreationalists (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).

# 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 to the northern Los Angeles County border. The proposed project is located approximately 16 miles northwest of the community of Rosamond, approximately 12 miles south of the City of Tehachapi, and approximately 44 miles southeast of the City of Bakersfield. The project site is located within Sections 23, 26, 27, 34 and 35 Township 10 North, Range 15 West, approximately 15 miles west of California State Highway 14 (Antelope Valley Freeway), 12.5 miles south of California State Highway 58 (Blue State Memorial Highway), and 8 miles north of State Route 138 (West Avenue D).

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 form northwest to southeast. Surrounding land uses include undeveloped land, residences, grazing, and wind energy farms. There are clusters of residences in the vicinity of the southwest portions of the project site. The major north-south roadways in the region are State Route (SR) 14, a four-lane highway approximately 15 miles east of the project site, and SR-166, approximately 31 miles west of the project site. The major east-west roadway near the project site is SR-138 (Avenue D), a two-lane highway approximately 8 miles south of the proposed project. The project site is approximately 12.5 miles south of SR-58 and approximately 30 miles east of Interstate 5 (I-5).

The Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail or PCT) is designated as a National Scenic Trail, and is located approximately 1 mile west of the western border of the project site, as well as approximately 1.8 miles to the north of the northern border. 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 34 miles south; the Desert Pines Wildlife Sanctuary and the Arthur B. Ripley Desert Woodland State Park located approximately 11 miles to the south; and the Antelope Valley California Poppy Reserve located approximately 13.5 miles to the south. The Los Angeles Aqueduct also runs along the south of the project site via 170th Street West.

## Local Character

The project site is located on 383 acres of both privately and publicly owned land that is relatively flat, with elevations ranging from approximately 3,350 feet above mean sea level (amsl) to approximately 3,800 amsl, and has a general slope to the south. The project site is located within the 180 megawatt (MW) Manzana Wind Project and surrounded by wind turbines on all sides. As described in more detail in Section 4.4, *Biological Resources*, the project site currently contains principally native scrub vegetation, along with

Joshua tree Woodland habitat, Mojave Desert Wash Scrub, Mojavean Juniper Woodland and Scrub, as classified according to the Manual of California Vegetation, online edition, and non-native grasses (SWCA Environmental Consultants 2018a). The nearest residence is approximately 1.2 miles west of the project site. There are clusters of residences located in the vicinity of the southwest portions of the project site. The proposed project would be visible from these residences. As described in more detail in Section 4.9, *Hydrology and Water Quality*, there is one small, partially defined channel within the western portion of the site, although the majority of water reaches the project site via sheet flow (Aztec Engineering Group, Inc. 2016a). Portions of the project site are zoned for agriculture and grazing uses, and the site has been used for agricultural practices in the past (HDR, Inc. 2017).

## Scenic Highways

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, the nearest officially designated State scenic highway is the Angeles Crest Highway (SR-2), located approximately 46 miles south of the project site (Caltrans 2019). The closest Eligible Scenic Highways are SR-14 (portion north of State Route 58 [SR-58]) located approximately 15.8 miles to the east of the project site and SR-58 (portion east of SR-14) located 16.0 miles northeast of the project site (Caltrans, 2017a). 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.

## Lighting Environment

The project site does not currently contain any lighting. Minimal offsite fixed lighting in surrounding areas includes blinking nighttime lighting from adjacent wind turbines, small residential lighting fixtures, and some street lighting within scattered residential areas. The main source of nighttime lighting is from motorists passing through the area with headlights on. These lighting sources do not produce a substantial amount of sustained nighttime lighting.

## Solar Panel Glare Potential

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

A common misconception about solar photovoltaic (PV) panels is that they inherently cause or create “too much” glare, posing a nuisance to neighbors and a safety risk for pilots. In certain situations, the glass surfaces of solar PV systems can produce glint (a momentary flash of bright light) and glare (a reflection of bright light for a longer duration); however, light absorption, rather than reflection, is central to the function of a solar PV panel so that it may absorb solar radiation and convert it to electricity. Solar PV panels are constructed of dark-colored (usually blue or black) materials and are covered with anti-reflective coatings. Modern PV panels reflect as little as 2 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, reflective surface, 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.

# 4.1.3 Regulatory Setting

## Federal

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

The National Trails System Act of 1968, as amended, calls for establishing trails in both urban and rural settings for people of all ages, interests, skills, and physical abilities. The Act promotes the enjoyment and appreciation of trails while encouraging greater public access. It establishes four classes of trails: national scenic trails, national historic trails, national recreation trails, and side and connecting trails (National Park Service 2018). The PCT is a national scenic trail, beginning in Southern California at the Mexican border and terminating at the Canadian border for a total distance of 2,650 miles (USDA 2019). National scenic trails are designed to provide for maximum outdoor recreation potential and designed to pass through areas with scenic, historic, natural and cultural qualities (USFS 2009). The U.S. Department of the Interior is seeking to reroute the portion of the PCT nearest to the proposed project through a different alignment across the Tehachapi Mountains on the Tejon Ranch (Pacific Crest Trail Association [PCTA], 2019). If this reroute occurs in the future, it is expected to move the PCT further from the proposed project.

## 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 have been designated as scenic highways or that are eligible to be designated as such. 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 the Streets and Highways Code, Sections 260 through 263.

# 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 evaluates the visual and aesthetic setting of Kern County and assesses the potential for visual impacts. According to this Element, the project site is not identified as a significant scenic resource.

The Kern County General Plan Energy Element defines critical energy related issues facing the County and sets forth goals, policies, and implementation measures to protect the County's energy resources and encourage orderly energy development while affording the maximum protection for the public's health and safety and the environment.

The Kern County General Plan (KCGP) Circulation Element provides guidelines for development near scenic routes. A Scenic Route is defined in the KCGP as a 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. The Kern County Board of Supervisor has not designated any roads as “scenic” within the County. The Kern County General Plan does not identify any scenic routes within the vicinity of the project site; therefore, no policies regarding development within scenic routes would be applicable to the proposed project.

The Kern County General Plan provides goals and policies for design features of development projects in order to reduce the impacts of such projects. 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 additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the proposed 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: To encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects.

***Policy***

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

## Kern County Zoning Ordinance

### *Chapter 19.74, Scenic Corridor Combining District*

Chapter 19.74 of the Zoning Ordinance establishes a Scenic Corridor (SC) Combining District. This zoning district is intended to protect areas with unique visual and scenic resources from intrusion by excessive or inappropriate forms of signage by requiring additional review by the Kern County Planning and Natural Resources Department. The project site is not located in the SC Combining District.

### *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. 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 EIR/EA section describes the impact analysis relating to aesthetics for the proposed project. It describes the methods used to determine the impacts of the proposed 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

As noted above, the project site is approximately 12 miles south of Tehachapi and 16 miles northwest of Rosamond. While both are classified as urban clusters by the U.S. Census Bureau (U.S. Census Bureau, 2010a and 2010b), neither meets the definition of urbanized area, as defined by CEQA *Guidelines* Section 15387.[1] Therefore, this analysis is based on the project site being in a non-urbanized area. Impacts to visual quality in non-urbanized areas are generally assessed by estimating the amount of visual change introduced by project components, the degree to which visual changes may be visible to surrounding viewer groups, and the general sensitivity of viewer groups to landscape alterations.

The proposed 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 identifies and assesses any potential long-term adverse visual impacts on aesthetics and visual resources that might result from implementation of the proposed

[1] CEQA *Guidelines* Section 15387 defines 'urbanized area as a central city or a group of contiguous cities with a population of 50,000 or more, together with adjacent densely populated areas having a population density of at least 1,000 persons per square mile. A Lead Agency shall determine whether a particular area meets the criteria in this section either by examining the area or by referring to a map prepared by the U.S. Bureau of the Census which designates the area as urbanized. Maps of the designated urbanized areas can be found in the California EIR Monitor of February 7, 1979…. Use of the term "urbanized area" in Section 15182 is limited to areas mapped and designated as urbanized by the U.S. Bureau of the Census.

project during construction and operation. This assessment is based on the visual assessment practices employed by the Bureau of Land Management (BLM 1986), as BLM is the project's federal Lead Agency for the project's review under the National Environmental Policy Act (NEPA). Under CEQA, visual changes are usually measured by three factors: (1) the amount of visual contrast that project components create (changes to form, line, color, texture, and scale in the landscape); (2) the amount of view obstruction that occurs (loss of view, duration/timing); and (3) the degradation of specific scenic resources (e.g., removal of scenic trees). As discussed below, the BLM methodology captures these factors and will be used for purposes of conducting an evaluation consistent with both CEQA and NEPA.

In general, the potential aesthetic, light, and glare impacts associated with 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 proposed project. This assessment is based on the approved visual assessment practices employed by the Federal Highway Administration (FHWA, 1981), the Bureau of Land Management (BLM, 1978, the U.S. Forest Service (USFS, 1990, and other federal regulatory agencies.

This method includes:

Defining the project and its visual setting by assessing the project proponent's submitted project application materials, including plans and descriptions, and reviewing Google Earth Pro aerial photographs and street-level photography, Kern County Geographic Information System (GIS) topographic and land use data, and U.S. Geological Survey (USGS) topographic data;

Conducting field visits at the project site and vicinity in November 2018 to establish a visual characteristic baseline and document the following:

- Surveying the onsite and surrounding uses to identify sensitive views and viewpoints for assessment of potential aesthetic impacts; and the proposed project site's visual characteristics.
- Analyzing the Project vicinity's visual quality characteristics of identified views.
- Taking photographs from the location of identified visual (sensitive) receptors in the vicinity.

Establishing KOPs within the 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 proposed project's impacts to sensitive views in comparison to their baseline visual quality and character, 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 analysis of the Kern County General Plan goals and policies related to visual resources, and the significance criteria established by CEQA *Guidelines*, Appendix G. The KOPs were determined by the County of Kern and BLM.

## Selection of Key Observation Points (KOPs)

To represent views that would be experienced from sensitive viewpoints, a total of six KOPs were selected. KOPs are single viewpoints that appropriately reflect the impact that implementation of the proposed project would have on one or more sensitive receptors. Sensitive receptors near the project site fall into the following categories: residents, motorists, pedestrians, and recreationalists. 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. The PCT, designated as a National Scenic Trail by the U.S. Forest Service, is analyzed as a public viewpoint due to the recreational use of the trail.

The observer's 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. There are no designated scenic highways within the viewshed of the proposed project that would attract recreational drivers.

Six KOPs were selected for visual simulation to create post-development views. The evaluated KOPs are mapped on **Figure 4.1-1**, *Key Observation Points (KOPs) and Visual Simulation Photograph Locations*, and described below in **Table 4.1-1**, *Key Observation Points*. The KOPs selected for simulation were chosen because they represent views motorists, pedestrians on public sidewalks/streets, and recreationalists would experience from their local roadways and the PCT, respectively, when viewing the project site. The selected KOPs represent views not only from the selected viewpoints, but are also intended to be representative of other sensitive receptors throughout the proposed project's vicinity.

**TABLE 4.1-1: KEY OBSERVATION POINTS**

| KOP | Location | Representative Sensitive Viewers |
|---|---|---|
| 1 | From the intersection of Rosamond Boulevard and 170th Street West looking northwest toward the project site. | General public and motorists south of the project site. |
| 2 | Intersection of an unnamed dirt road and unnamed wash approximately 1.3 miles east of the project site looking west toward the project site. | General public and motorists east of the project site. |
| 3 | From the southeast corner of Rosamond Boulevard and 25th Street West looking northwest toward the project site. | Motorists and pedestrians at the nearest major intersection to the project site. |
| 4 | From PCT within BLM land looking south/southeast toward the project site (2.5 miles from project site boundary). | Representative view for recreationalists on the PCT. |
| 5 | From PCT within BLM land looking south/southeast toward the project site (2.3 miles from project site boundary) | Representative view for recreationalists on the PCT. |
| 6 | From PCT within BLM land looking south/southeast toward the project site. (2.2 miles from project site boundary) | Representative view for recreationalists on the PCT. |

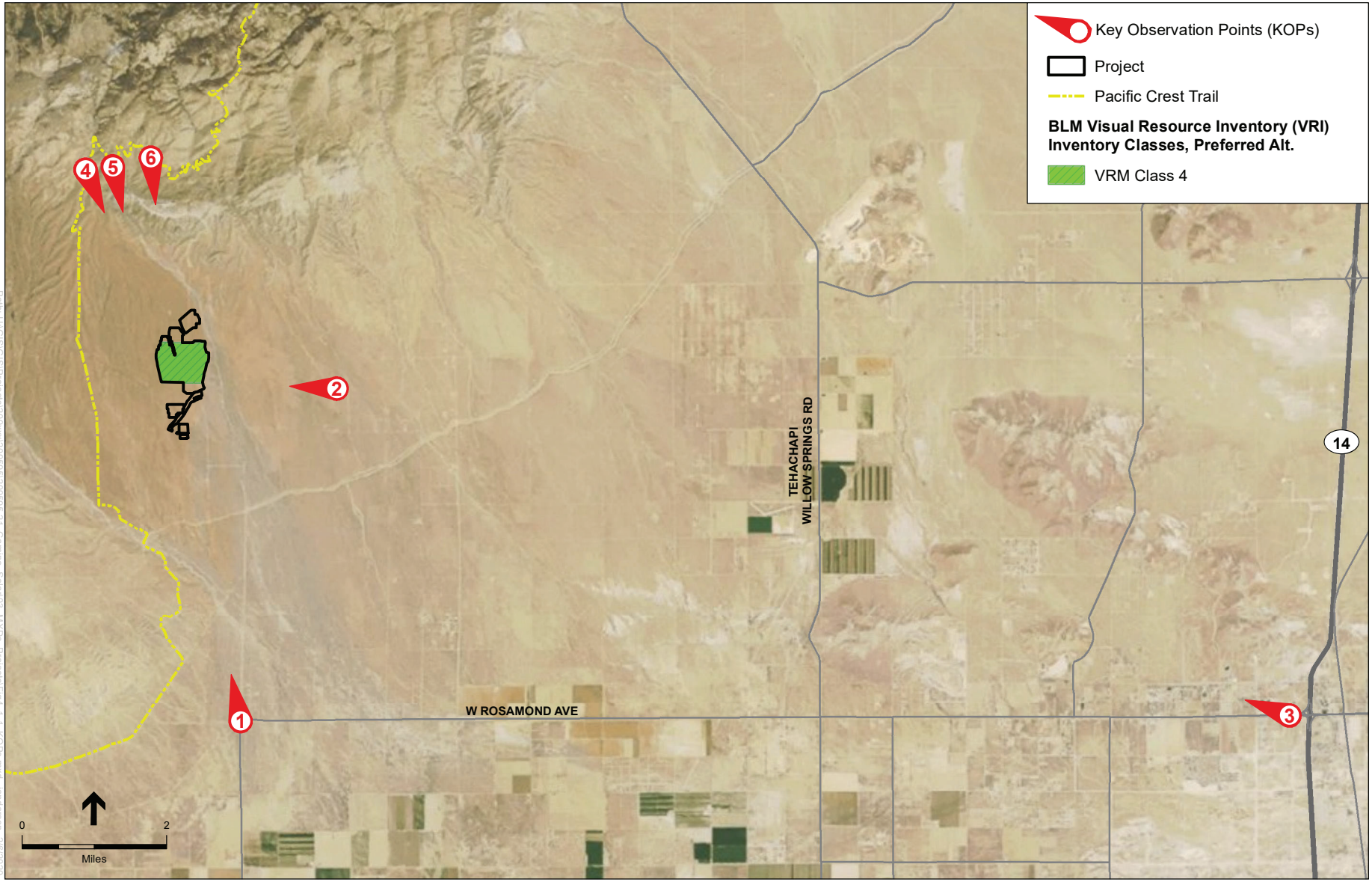


**Figure 4.1-1: KEY OBSERVATION POINTS (KOPs) AND VISUAL SIMULATION PHOTOGRAPH LOCATIONS**

## Simulation Preparation

Visual simulations of the proposed 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 proposed project. Photographs for KOPs 1 through 3 were taken during a site visit in November 2018 and simulations were prepared (VisionScape 2018) using the assumptions and methodologies listed below in **Table 4.1-2**, *Visual Simulation Methodology and Assumptions (KOPs 1–3).* Photographs for KOPs 4 through 6 were also taken during another site visit in November 2018; however, the simulations were prepared using BLM guidance (BLM 2018b) at the Bureau's direction using the assumptions and methodologies listed below in **Table 4.1-3**, *Visual Simulation Methodology and Assumptions (KOPs 4-6).*

**TABLE 4.1-2: VISUAL SIMULATION METHODOLOGY AND ASSUMPTIONS (KOPS 1-3)**

| | |
|---|---|
| Photography from Key Observation Points | Photos were taken on a sunny, clear day in November 2018<br>Visibility: 6 miles plus<br>Camera: Canon 5D digital camera with a 28 to 52 mm zoom. When possible, 50 to 52 mm was used to simulate the focal length of the human eye. |
| Visual simulation assumptions | Solar panels are 7 feet in height and separated by 13 feet (edge to edge) or 19 feet (center to center).<br>Solar panels are single axis tracking system and are shown at 45-degree rotation.<br>Fencing is 7 feet in height, including 6 feet of chain link topped by 1 foot of barbed wire.<br>Panel setbacks from property line ranges: South 250–1150 feet, West 70–2850 feet, North 270–2150 feet, East 1325–1780 feet. |
| Methods | Following data gathering phase, the process began with a determination of proposed camera locations and station points. Upon review and approval of camera locations, VisionScape coordinated the engineered site photography and scheduled the initial site visit. This included identification of reference points with GPS coordinates and specific fields of vision for each view. Concurrently, the modeling team developed an exact computer model of the proposed solar panels to illustrate elevations and natural and finished pads, including existing and surrounding contextual elements such as streets, terrain, pads, and adjacent buildings (where applicable) used as reference. Upon completion of the 3D modeling phase, realistic materials, maps, and textures were then applied. The next phase was assembly, during which the modeling was inserted into photographs taken during the field study using a full frame camera and camera match technology. 3D pads and boundary outlines were used to situate the panels to the proposed positions as shown on the cad drawings provided. During this process, a computer model camera was aligned with the onsite photography to depict the project setting within each view. Lastly, a proposed landscape concept was applied (where applicable) and final artistic touches were made to ensure accuracy, as well as a look and feel consistent with the vision of the project. GPS and camera match technology included the use of a Trimble GeoXT (Sub-Meter) GPS device and a "full frame" digital camera for documenting coordinates at requested station points. The final simulations were then composed in Adobe Photoshop. |

SOURCE: VisionScape 2019

**TABLE 4.1-3: VISUAL SIMULATION METHODOLOGY AND ASSUMPTIONS (KOPS 4–6)**

| | |
|---|---|
| Photography from Key Observation Points | Photos were taken on a sunny, clear day in November 2018<br>Visibility: 6 miles plus<br>Camera: Canon 5D digital camera with a 28 to 52 mm zoom. When possible, 50 to 52 mm was used to simulate the focal length of the human eye. |
| Visual simulation assumptions | Solar panels are 10 feet tall separated 14 feet (edge to edge) or 19 feet (center to center).<br>Solar panels are single axis tracking system and are shown at 45-degree rotation.<br>Fencing is 9 feet in height, including 7.5 feet of chain link topped by 1.5 feet of barbed wire.<br>Panel setbacks from property line ranges: South 30-430 feet, West 30-230 feet, North 25-190 feet, East 30-350 feet |
| Methods | Following data gathering phase, the process began with a determination of proposed camera locations and / or station points. Upon review and approval of camera locations, VisionScape coordinated the engineered site photography and scheduled the initial site visit. This included identification of reference points with GPS coordinates and specific fields of vision for each view. Concurrently, the modeling team developed an exact computer model of the proposed solar panels illustrate elevations, natural and finished pads including existing and surrounding contextual elements such as streets, terrain, pads, and adjacent buildings (where applicable) used as reference. Upon completion of the 3D modeling phase, realistic materials, maps, and textures were then applied. The next phase was assembly, during which the modeling was inserted into photographs taken during the field study using a full frame camera and camera match technology. 3D pads and boundary outlines were used to situate the panels to the proposed positions as shown on the cad provided. During this process, a computer model camera was aligned with the onsite photography to depict the project setting within each view. Lastly, a proposed landscape concept was applied (where applicable) and final artistic touches were made to ensure accuracy, as well as the look and feel, was consistent with the vision of the project. GPS and Camera Match Technology included the use of a Trimble GeoXT (Sub-Meter) GPS device and a "Full Frame" digital camera for documenting coordinates at requested station points. The final simulations were then composed in Adobe Photoshop. |
| SOURCE: BLM 2019 | |

A comparison of existing views from the KOPs with visual simulations, depicting visible proposed 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 proposed project may look from the identified KOPs. Solar arrays are visually similar regardless of the manufacturer. Therefore, the solar arrays shown in the visual simulations are not necessarily identical to those that would be developed on the sites, but are similar enough to evaluate project impacts to aesthetics.

## Rating Visual Quality

"Visual quality" is a measure of a landscape or view's visual appeal. While there are a number of standardized methods for rating visual quality, the "Scenic Contrast Rating Criteria" (SCRC) method used by 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. The SCRC method has been applied in this analysis, as BLM is the Lead Agency for project review under NEPA (BLM 1986).

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, and 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 4.1-4**, *Visual Quality Rating System*, for the point values associated with the various criteria.

**TABLE 4.1-4: 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 muted tones. |
| | **Score** 5 | **Score** 3 | **Score** 1 |
| **Influence of Adjacent Scenery** | Adjacent scenery greatly enhances visual quality. | Adjacent scenery moderately enhances overall visual quality. | Adjacent scenery has little or no influence on overall visual quality. |
| | **Score** 5 | **Score** 3 | **Score** 1 |
| **Scarcity** | One of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. | Distinctive, though somewhat similar to others within the region. | Interesting within its setting but fairly common within the region. |
| | **Score** 5 | **Score** 3 | **Score** 1 |
| **Cultural Modifications** | Modifications add favorably to visual variety while promoting visual harmony. | Modifications add little or no visual variety to the area, and introduce no discordant elements. | Modifications add variety but are very discordant and promote strong disharmony. |
| | **Score** 2 | **Score** 0 | **Score** -4 |

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

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

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

**Potentially Significant Impact:** Any impact that could potentially lower the visual quality of an identified sensitive viewpoint by two 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 that a project could potentially have a significant adverse effect on aesthetic resources, 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 non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; or

d. Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

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/EA. Please refer to Appendix A of this EIR/EA for a copy of the NOP/IS and additional information regarding these issue areas:

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

   According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, the closest eligible scenic highway is Angeles Crest Highway (SR-2), which is approximately 46 miles south of the project site. Because of this distance, the PV solar facilities would not be visible from SR-2. Therefore, project impacts to scenic resources within a state scenic highway would not occur.

d. Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

   There are clusters of residences in the vicinity of the southwest portions of the project site. The proposed project would be visible from these residences located outside of the project site. The PV modules are designed to absorb sunlight to maximize electrical output; therefore, they would not create significant reflective surfaces or the potential for glint/glare during the day. No permanent lighting is proposed at the solar facilities. Temporary lighting may be used during construction but would be designed to provide the minimum illumination needed to achieve work objectives, and would be directed downward and shielded to focus illumination on the desired areas only and minimize light trespass. Therefore, no impact would occur.

# Project Impacts

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

As previously described in Section 4.1.2, *Environmental Setting*, there are no locally designated scenic vistas within the vicinity of the proposed project. However, the PCT, which is designated as a National Scenic Trail by the U.S. Forest Service, is located approximately 1 mile west of the western border of the project site, as well as approximately 1.8 miles to the north of the northern border of the project site. The PCT was designed to provide outstanding recreational opportunities, in part by primarily passing through areas of high scenic quality. However, there are also segments of the PCT, such as the portion located in proximity to the project site, that traverse areas developed for agriculture and energy facilities. Viewpoints for portions of the PCT developed with agriculture and energy facilities may not be classified as areas of high scenic quality. However, the PCT is conservatively considered a scenic vista viewpoint for the purpose of this analysis. Viewer sensitivity for recreationalists along the PCT is considered high given the scenic intent of the trail experience. Therefore, this analysis related to scenic vistas is limited to KOPs 4, 5, and 6, which represent views for recreationalists on the PCT.

The proposed project would be visible from some viewpoints along the PCT and adjacent areas. Specifically, the proposed project would be visible from KOP 4 (Figure 4.1-5), located on the PCT. The effects of the proposed project on the visual character from these viewpoints is analyzed in Impact 4.1-3, below. The proposed project's solar arrays among the existing wind turbines would add additional discordant elements to the middleground of the scenic vistas at KOP 4. Solar panels would be a light gray

in color, which would contrast with the muted earth tones in that portion of the viewscape, especially if glare occurs. Impacts associated with the introduction of additional discordant elements could have an adverse effect on a scenic vista for recreationalists along the PCT. However, the quality of the existing scenic vista from KOP 4 is considered moderate to low given the existing visible solar facilities and wind turbines. Additionally, the view of the proposed project would be partially obstructed from KOP 4 by existing wind turbines. Furthermore, as evidenced by KOP 5 (Figure 4.1-6) and KOP 6 (Figure 4.1-7), the proposed project would not be visible from some other portions of the PCT and adjacent areas due to topographic obstruction and distance from the project site. Given the moderate to low visual quality and existing visual obstructions, the proposed project would not have a substantial adverse effect on a scenic vista. Therefore, impacts 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 degrade the existing visual character or quality of the site and its surroundings in a non-urbanized area.

#### *Construction*

Construction activities associated with the proposed project would result in the presence of construction equipment on site, including delivery trucks and vehicles used in site preparation, storage areas containing construction materials, and active work areas where construction is taking place. The visual elements associated with such construction would be typically considered out of character with the surrounding sparsely distributed wind turbines and the rural landscape; however, given that public access ends over 1 mile from the project site, and the closest major roadway is over 8 miles away, construction activities would not be viewed from publicly accessible vantage points. Moreover, construction vehicles and equipment would be present on site for a limited time (a maximum of 6 months) and would be concentrated in certain areas on site rather than spread across the entire project site at one time. Construction would not exceed 12 months, which is the temporal threshold for visual impacts attributable to construction. Construction equipment and vehicles would be removed immediately following the end of all construction activities. Construction activities include site preparation (removal and disposal of existing vegetation), grading, trenching, and the installation of solar arrays, associated structures, and utilities. In sum, since visual impacts associated with the construction phase would not be viewed from publicly accessible vantage points, would be limited in duration, and would only impact a portion of the project site at any given time, related impacts to visual character or quality during construction would be less-than-significant.

#### *Operation*

In order to determine whether the proposed project would substantially degrade the existing visual quality of the site, this analysis compares the existing visual setting with visual simulations of the post-project visual conditions. As described above in 4.1.4, Methodology, six KOPs were selected for visual simulation. These KOPs are representative of views that would be experienced from sensitive receptor locations.

Visual simulations of views from each KOP are provided in **Figures 4.1-2** through **4.1-7**. The methodology for these simulations are described in Table 4.1-2, *Visual Simulation Methodology and Assumptions (KOPs 1–3)* and Table 4.1-3, *Visual Simulation Methodology and Assumptions (KOPs 4–6)*. Impacts associated with operation of the proposed project would vary by viewer location and are discussed below by KOP. The rating system and impacts methodology are discussed in the "Rating Visual Quality" section above. The details of the evaluation are presented in corresponding ratings matrices in **Tables 4.1-5** through **4.1-10**. Summaries of these analyses proceed each table.

**KOP 1. Figure 4.1-2**, *Existing and Simulated Views from the Intersection of Rosamond Boulevard and 170th Street West Looking Northwest towards the Project*, represents what motorists and the general public would see when looking northwest toward the proposed project from the intersection of Rosamond Boulevard and 170th Street West. The existing view from KOP 1 consists of: a paved roadway; bare ground areas; native scrub vegetation in the foreground; wind turbines and native scrub vegetation in the middleground; and mountains in the background. The post-development view shows the proposed solar facility visible as a dark blue strip in the distance, partially obscured by wind turbines and existing topography, located upslope near the base of the mountains. As shown in **Table 4.1-5**, *Visual Quality Rating Analysis – KOP 1*, the pre-development score is 9 and the post-development score is 8. Since the difference in scores would be 1 point, visual impacts at KOP 3 would be less-than-significant.

**TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS – KOP 1**

**Sensitive Receptor: Public and Motorists at the Intersection of Rosamond Boulevard and 170th Street West Looking Northwest towards the Project**
**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 | 3 | 3 | 0 | Less than Significant |
| *Explanation:* | A flat paved roadway intersection with flat valley landscape, minor foothills in the middleground, and larger mountains in the background. | The project would be visible from this viewpoint as a thin dark blue strip at a base of the distant mountain. | | |
| *Detail:* | Post development, the paved roadway intersection and flat valley landscape would continue to dominate the foreground, foothills would continue to be visible in the middleground, and larger mountains would be visible in the background. The project would not modify landforms in the view. There would be a less-than-significant visual impact to landforms resulting from implementation of the project. | | | |
| Vegetation | 2 | 2 | 0 | Less than Significant |
| *Explanation:* | Low-lying desert scrub vegetation along can be seen on either side of the paved roadway and on the foothills in the middleground. | The project would be located at such a distance from this viewpoint that it would not obscure any discernable vegetation. | | |
| *Detail:* | Post development, all discernable desert scrub vegetation would remain visible in the foreground and middleground. Any vegetation obscured by the proposed project would not be visible given its distance from this viewpoint. Impacts would be less-than-significant. | | | |

**TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS – KOP 1**

**Sensitive Receptor: Public and Motorists at the Intersection of Rosamond Boulevard and 170th Street West Looking Northwest towards the Project**
**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 |
|---|---|---|---|---|
| Water | 1 | 1 | 0 | No Impact |
| *Explanation:* | No water is visible from this viewpoint. | The project would not obscure the view of any existing water. | | |
| *Detail:* | No water is visible from this viewpoint; therefore, the project would not obscure the view of any existing water, and there would be no impact. | | | |
| Color | 2 | 2 | 0 | Less than Significant |
| *Explanation:* | There is low to moderate variation in color visible from this viewpoint. Grays and browns are present in the foreground and middleground associated with the paved roadway and adjacent soil. Shades of brown, yellow, green, and red are visible in the foreground and middleground associated with soil and vegetation in flat and foothill areas. Shades of brown, blue, and gray associated with the and mountains can be seen in the background. Shades of white and gray are visible in the middleground and background associated with existing wind turbines. | The project would add a faded dark blue strip at the base of the distant mountains; given the existing grayish blue tones in the mountains and light gray tones of the wind turbines, this would not alter the overall intensity or variety in colors. | | |
| *Detail:* | The project would add a dark blue strip at the base of the mountains that would be generally consistent with the top of the mountain hues. Impacts would be less-than-significant. | | | |
| Adjacent Scenery | 3 | 3 | 0 | Less than Significant |
| *Explanation:* | Adjacent scenery including native desert vegetation in the foreground and middleground and foothills and mountains in the background moderately enhances visual quality. | The project would be located in the distance at the foot of the mountains, visible as thin strip, and would thus not substantially modify adjacent scenery. | | |

**TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS – KOP 1**

**Sensitive Receptor: Public and Motorists at the Intersection of Rosamond Boulevard and 170th Street West Looking Northwest towards the Project**
**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 |
|---|---|---|---|---|
| *Detail:* | The majority of scenery, including native desert vegetation, foothills, and mountains, would all remain visible following installation of the project at the foot of the mountains. Impacts would be less-than-significant with mitigation incorporated. | | | |
| Scarcity | 1 | 1 | 0 | Less than Significant |
| *Explanation:* | The view includes generally open desert landscapes that include flat areas, foothills, and mountains, including both native desert vegetation, dirt roads, and wind turbines, which are not scarce. Similar viewsheds exist throughout the region. | Minor changes from the proposed project's addition to the viewpoint would not alter the scarcity of this viewpoint. | | |
| *Detail:* | The existing viewpoint of an open desert landscape including flat areas, foothills, and mountains covered by vegetation. There would be no impact. | | | |
| Cultural Modifications | -3 | -4 | -1 | Less than Significant |
| *Explanation:* | Man-made modifications in this view include the predominant paved roadway intersection in the foreground, a dirt road on the foothills, and several wind turbines in the middleground and background. These modifications are discordant and promote disharmony in the existing physical environment. | The project would add another discordant modification to the base of the mountains. The proposed project would be partially obscured by existing wind turbines and would be visible in the distance as a thin strip. | | |
| *Detail:* | The project would add a cultural modification to the viewscape and would thus increase the visible man-made modifications. However, given the existing cultural modifications in the environment and the partial obscuring of the project by wind turbines, the viewpoint's overall cultural modifications would not be substantially altered. Impacts would be less-than-significant. | | | |
| **Totals:** | **9** | **8** | **-1** | **Less than Significant** |

Existing View

Proposed View

**Figure 4.1-2: KOP 1: EXISTING AND SIMULATED VIEWS FROM THE INTERSECTION OF ROSAMOND BOULEVARD AND 170TH STREET WEST LOOKING NORTHWEST TOWARDS THE PROJECT**

**KOP 2. Figure 4.1-3**, *Existing and Simulated Views from an Existing Residence Looking West Toward the Project*, shows what a nearby residence would see when looking west toward the project site from the intersection of an unnamed dirt road and unnamed wash near an existing residence. The existing view from KOP 2 shows: native desert vegetation; including scrub vegetation and Joshua trees; portions of a dirt road and wash in the foreground; power lines and wind turbines in the middleground; and mountains in the background. The post-development view is identical to the pre-development view, as the proposed solar facilities would be obscured by the existing topography, which increases in slope to the west of the wash. As shown in **Table 4.1-6**, *Visual Quality Rating Analysis – KOP 2*, the pre-development score is 12 and the post-development score is 12. Since the difference in scores would be 0 points, there would be no visual impacts at KOP 2.

**TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 2**

**Sensitive Receptor: Nearby Resident**
**Pre-development and post-development conditions are depicted in Figure 4.1-3.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| Landform | 2 | 2 | 0 | No Impact |
| *Explanation:* | A dirt road and a desert wash cross each other in the left foreground. The land then increases in elevation up to a small ridge. Mountains are visible in the background. | The project would not be visible from this viewpoint and would thus not modify the existing view's topography. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify the existing view's topography. There would be no impact. | | | |
| Vegetation | 3 | 3 | 0 | No Impact |
| *Explanation:* | Low-lying desert scrub vegetation along with Joshua trees can be seen in the foreground, middleground, and background. | The project would not be visible from this viewpoint and would thus not modify the existing vegetation. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify the existing view's vegetation. There would be no impact. | | | |
| Water | 2 | 2 | 0 | No Impact |
| *Explanation:* | Although the view is of a desert wash, no water was visible from this viewpoint at the time of the photograph. The wash is likely ephemeral and contains water after storm events. | The project would not be visible from this viewpoint and would thus not modify the existing view (regardless of the presence of water features). | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify the existing view in any way. There would be no impact. | | | |

**TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 2**

**Sensitive Receptor: Nearby Resident**
**Pre-development and post-development conditions are depicted in Figure 4.1-3.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| Color | 2 | 2 | 0 | No Impact |
| *Explanation:* | There is low to moderate variation in color visible from this viewpoint. Shades of brown, yellow, green, and red are visible throughout the foreground and middleground associated with soil and vegetation. Shades of brown, blue, and gray associated with the hill and mountains can be seen in the background. Shades of white and gray are visible in the middleground and background associated with existing wind turbines and power poles. | The project would not be visible from this viewpoint and would thus not modify the existing colors in the viewpoint. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify existing colors. There would be no impact. | | | |
| Adjacent Scenery | 3 | 3 | 0 | No Impact |
| *Explanation:* | Adjacent scenery including native desert vegetation in the foreground and middleground and mountains moderately enhances visual quality. | The project would not be visible from this viewpoint and would thus not modify any existing adjacent scenery. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify existing adjacent scenery. There would be no impact. | | | |
| Scarcity | 2 | 2 | 0 | No Impact |
| *Explanation:* | The view includes a desert wash crossing a dirt road, a small ridge, native vegetation, wind turbines, power poles, and mountains. While desert washes are not as common as the other components, there are no unique or unusual aspects from this view because similar viewsheds exist throughout the region. | The project would not be visible from this viewpoint and would thus not alter the scarcity of the viewpoint. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not alter the scarcity of the viewpoint. There would be no impact. | | | |

**TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 2**

**Sensitive Receptor: Nearby Resident**
**Pre-development and post-development conditions are depicted in Figure 4.1-3.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| Cultural Modifications | -2 | -2 | 0 | No Impact |
| *Explanation:* | Man-made modifications in this view include the dirt road, the tops of wind turbines, and power poles. These modifications, especially the latter two, are discordant and promote disharmony in the existing physical environment. | The project would not be visible from this viewpoint and would thus not add or remove any cultural modifications. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not add or remove any cultural modifications. There would be no impact. | | | |
| **Totals:** | **12** | **12** | **0** | **No Impact** |

Existing View

Proposed View

**Figure 4.1-3: KOP 2: EXISTING AND SIMULATED VIEWS FROM AN EXISTING RESIDENCE LOOKING WEST TOWARD THE PROJECT**

**KOP 3. Figure 4.1-4**, *Existing and Simulated Views from the Intersection of Rosamond Boulevard and 25th Street West Looking Northwest Toward the Project*, represents what motorists and residents would see when looking northwest toward the project site from the nearest major public intersection to the project site. The existing view from KOP 3 shows unpaved dirt, a paved intersection, power poles, streetlights, residences, commercial buildings, utility boxes, ornamental trees and shrubs, commercial signs, and cars. The post-development view is identical to the pre-development view, as the proposed solar facilities would be located 14.75 miles from this location and substantial development and topography changes exist between the project site and this viewpoint. As shown in **Table 4.1-7**, *Visual Quality Rating Analysis – KOP 3*, the pre-development score is 3 and the post-development score is 3. Since the difference in scores would be 0 points, there would be no visual impacts at KOP 3.

**TABLE 4.1-7: VISUAL QUALITY RATING ANALYSIS – KOP 3**

**Sensitive Receptor: General Public and Motorists at the Intersection of Rosamond Boulevard and 25th Street West**
**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 | 1 | 1 | 0 | No Impact |
| *Explanation:* | The landform is flat, with some very distant mountains in the background. The flat land surface consists of compacted dirt, a paved roadway intersection, and some sidewalks. The view also includes power lines, streetlights, telephone poles, ornamental trees, residences, signage, and commercial buildings. | The project would not be visible from this viewpoint and would thus not modify the existing view's topography. | | |
| *Detail:* | N/A | | | |
| Vegetation | 1 | 1 | 0 | No Impact |
| *Explanation:* | Ornamental trees and some sparse weeds are present in the middleground. | The project would not be visible from this viewpoint and would thus not modify the existing vegetation. | | |
| *Detail:* | N/A | | | |
| Water | 1 | 1 | 0 | No Impact |
| *Explanation:* | No water or facilities that could hold water are visible from this viewpoint. | The project would not be visible from this viewpoint and no water-bearing features are visible. | | |
| *Detail:* | N/A | | | |

**TABLE 4.1-7: VISUAL QUALITY RATING ANALYSIS – KOP 3**

**Sensitive Receptor: General Public and Motorists at the Intersection of Rosamond Boulevard and 25th Street West**
**Pre-development and post-development conditions are depicted in Figure 4.1-4.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| Color | 2 | 2 | 0 | No Impact |
| *Explanation:* | There is low to moderate variation in color visible from this viewpoint. The compacted dirt, paved roadway, residences, and commercial buildings are generally muted tones of varying shades but mostly grays and browns. The most contrast is provided from the dark green ornamental trees. | The project would not be visible from this viewpoint and would thus not modify the existing colors in the viewpoint. | | |
| *Detail:* | N/A | | | |
| Adjacent Scenery | 1 | 1 | 0 | No Impact |
| *Explanation:* | Adjacent scenery includes ornamental trees and a barely visible distant mountain, which minimally influence visual quality. | The project would not be visible from this viewpoint and would thus not modify any existing adjacent scenery. | | |
| *Detail:* | N/A | | | |
| Scarcity | 1 | 1 | 0 | No Impact |
| *Explanation:* | The view is of a paved intersection in a developed area, which is very common within Rosamond and other small communities in the Antelope Valley. | The project would not be visible from this viewpoint and would thus not alter the scarcity of the viewpoint. | | |
| *Detail:* | N/A | | | |
| Cultural Modifications | -4 | -4 | 0 | No Impact |
| *Explanation:* | Man-made modifications in this view include compacted dirt, paved roadways, power lines, streetlights, telephone poles, ornamental trees, residences, signage, and commercial buildings. | The project would not be visible from this viewpoint and would thus not add or remove any cultural modifications. | | |
| *Detail:* | N/A | | | |
| **Totals:** | **3** | **3** | **0** | **No Impact** |

Existing View

Proposed View

**Figure 4.1-4: KOP 3: EXISTING AND SIMULATED VIEWS FROM THE INTERSECTION OF ROSAMOND BOULEVARD AND 25TH STREET WEST LOOKING NORTHWEST TOWARD THE PROJECT**

**KOP 4. Figure 4.1-5**, *Existing and Simulated Views from the PCT Looking South/Southeast Toward the Project Site*, represents what PCT recreationalists would see when looking south/southeast toward the project site from the trail. The existing view from KOP 4 shows a dirt trail, native scrub vegetation, nearby mountainous topography in the foreground, wind turbines and solar facilities in the middleground, and distant mountains in the background. The post-development view shows the proposed solar facilities as a white polygon interspersed with the wind turbines, replicating the appearance of the solar installations in the distance, though closer in view. As shown in **Table 4.1-8**, *Visual Quality Rating Analysis – KOP 4*, the pre-development score is 12 and the post-development score is 11. Since the difference in scores would be 1 point, visual impacts at KOP 4 would be less than significant.

**TABLE 4.1-8: VISUAL QUALITY RATING ANALYSIS – KOP 4**

**Sensitive Receptor: PCT Recreationalist**
**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 |
| *Explanation:* | The landform includes foothills that descend southward from the viewpoint into a low-lying flat valley area. Distant mountains are visible on the other side of the valley. | The project would be located in the low-lying flat area and would thus not modify the existing view's topography. | | |
| *Detail:* | The project would not substantially alter the existing flat topography present in the low-lying valley area following its installation. Therefore, impacts would be less-than-significant. | | | |
| Vegetation | 2 | 2 | 0 | No Impact |
| *Explanation:* | A large native desert shrub and some smaller shrubs dominate the foreground. This desert scrub vegetation is also visible in the middleground and background. | The project would displace a thin horizontal area of some vegetation that is not clearly discernable in the background. | | |
| *Detail:* | Although the project would displace some native vegetation in the distance, most of the vegetation in the existing viewshed would still be visible—including all vegetation in the foreground and middleground. Impacts would be less-than-significant. | | | |
| Water | 1 | 1 | 0 | No Impact |
| *Explanation:* | No water is visible from this viewpoint. There are no clear landforms that could hold water. | Due to the lack of water-bearing landforms, the project would not affect water features. | | |
| *Detail:* | Given the current absence of visible water in the landscape and the flatness of the project site, the project would not likely displace any water from this view. Impacts would be less-than-significant. | | | |

**TABLE 4.1-8: VISUAL QUALITY RATING ANALYSIS – KOP 4**

**Sensitive Receptor: PCT Recreationalist**
**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 | 2 | 0 | No Impact |
| *Explanation:* | There is low to moderate variation in color visible from this viewpoint. Shades of brown, yellow, green, and red are visible throughout the foreground, middleground, and background associated with soil and vegetation. Shades of brown, and green associated with the foothills are visible in the middleground, and shades of gray and blue associated with mountains can be seen in the background. Shades of white and gray are visible in the background associated with existing wind turbines and distant solar facilities. | The project would add a light gray hue to the background; however, this hue is generally consistent with existing wind turbines and other distant solar facilities. The appearance of the project replicates the color, shape, and pattern of the other solar installations in the background. | | |
| *Detail:* | Although the project would replace a muted brownish blue color with a light grey color, light grey tones are generally consistent with the tones of existing wind and solar development nearby. Given no substantial alteration to existing colors, impacts would be less-than-significant. | | | |
| Adjacent Scenery | 3 | 3 | 0 | No Impact |
| *Explanation:* | Adjacent scenery, including native desert vegetation as well as foothills and mountains, are partially blocked by a native shrub but still moderately enhance visual quality. | The project would be located in the low-lying valley area, which is rather distant from the viewpoint. Most vegetation, foothills, and mountains would remain visible. | | |
| *Detail:* | The project would not impede the views of most existing vegetation, foothills, and mountains, and would thus not result in a substantial change to adjacent scenery. Impacts would be less-than-significant. | | | |

**TABLE 4.1-8: VISUAL QUALITY RATING ANALYSIS – KOP 4**

**Sensitive Receptor: PCT Recreationalist**
**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 |
|---|---|---|---|---|
| Scarcity | 2 | 2 | 0 | No Impact |
| *Explanation:* | The view includes desert scrub vegetation, foothills, and distant mountains, as well as distant wind turbines and solar facilities. There are no unique or unusual aspects from this view because similar viewsheds exist along the PCT. | The project would only impede views of distant vegetation, and would thus not alter the scarcity of this view. | | |
| *Detail:* | The project would only impede views of distant vegetation, and would thus not alter the scarcity of this view. Impacts would be less-than-significant. | | | |
| Cultural Modifications | -1 | -2 | -1 | Less Than Significant |
| *Explanation:* | Man-made modifications in this view include wind turbines and solar facilities. These modifications are discordant and promote disharmony in the existing physical environment. | The project would contribute a man-made modification to the background of the view that would be more visible than the other man-made modifications as it is closer and continuous in area (rather than sparsely distributed wind turbines). | | |
| *Detail:* | Installation of the proposed project would add a man-made element to the background area of this view that is similar in nature, but is more visible than more distant solar facilities. Also, the continuous large area taken up by the proposed project has a greater visual impact than existing wind turbines due to the higher level of view obstruction over the continuous area when compared to scattered wind turbines. Despite this change, impacts would still be less than significant. | | | |
| **Totals:** | **12** | **11** | **-1** | **Less Than Significant** |

Existing View

Proposed View

**Figure 4.1-5: KOP 4: EXISTING AND SIMULATED VIEWS FROM THE PCT LOOKING SOUTH/SOUTHEAST TOWARD THE PROJECT SITE**

**KOP 5. Figure 4.1-6**, *Existing and Simulated Views from the PCT Looking South/Southeast Toward the Project Site*, represents what PCT recreationalists would see when looking south/southeast toward the project site. The existing view from KOP 5 includes: a dirt trail; native desert scrub vegetation; rolling foothills in the foreground; solar facilities; wind turbines; desert vegetation in the middleground; and mountains in the distance. The post-development view is identical to the pre-development view, as the proposed solar facilities would be blocked by a foothill. As shown in **Table 4.1-9**, *Visual Quality Rating Analysis – KOP 5*, the pre-development score is 13 and the post-development score is 13. Since the difference in scores would be 0 points, there would be no visual impacts at KOP 5.

**TABLE 4.1-9: VISUAL QUALITY RATING ANALYSIS – KOP 5**

**Sensitive Receptor: PCT Recreationalist**
**Pre-development and post-development conditions are depicted in Figure 4.1-6.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| Landform | 3 | 3 | 0 | No Impact |
| *Explanation:* | A dirt trail is visible in the foreground, along with rolling foothills, a flat valley area, and distant mountains. | The project would not be visible from this viewpoint and would thus not modify the existing view's topography. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify the existing view's topography. There would be no impact. | | | |
| Vegetation | 2 | 2 | 0 | No Impact |
| *Explanation:* | Low-lying desert scrub vegetation can be seen in the foreground, middleground, and background. | The project would not be visible from this viewpoint and would thus not modify the existing vegetation. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify the existing view's vegetation. There would be no impact. | | | |
| Water | 1 | 1 | 0 | No Impact |
| *Explanation:* | No water is visible from this viewpoint. There are no clear landforms that could hold water. | Due to the lack of water-bearing landforms, the project would not affect water features. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify the existing view in any way. There would be no impact. | | | |

**TABLE 4.1-9: VISUAL QUALITY RATING ANALYSIS – KOP 5**

**Sensitive Receptor: PCT Recreationalist**
**Pre-development and post-development conditions are depicted in Figure 4.1-6.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| Color | 2 | 2 | 0 | No Impact |
| *Explanation:* | There is low to moderate variation in color visible from this viewpoint. Shades of brown, yellow, green, and red are visible throughout the foreground, middleground, and background associated with soil and vegetation. Shades of brown, blue, and gray associated with the foothills and mountains can be seen in the background. Shades of white and gray are visible in the middleground and background associated with existing wind turbines and distant solar facilities. | The project would not be visible from this viewpoint and would thus not modify the existing colors in the viewpoint. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify existing colors. There would be no impact. | | | |
| Adjacent Scenery | 4 | 4 | 0 | No Impact |
| *Explanation:* | Adjacent scenery, including native desert vegetation as well as foothills and mountains, enhances visual quality. | The project would not be visible from this viewpoint and would thus not modify any existing adjacent scenery. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify existing adjacent scenery. There would be no impact. | | | |
| Scarcity | 2 | 2 | 0 | No Impact |
| *Explanation:* | The view includes desert scrub vegetation, a dirt trail, foothills, and distant mountains, as well as distant wind turbines and solar facilities. There are no unique or unusual aspects from this view because similar viewsheds exist along the PCT. | The project would not be visible from this viewpoint and would thus not alter the scarcity of the viewpoint. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not alter the scarcity of the viewpoint. There would be no impact. | | | |

**TABLE 4.1-9: VISUAL QUALITY RATING ANALYSIS – KOP 5**

**Sensitive Receptor: PCT Recreationalist**
**Pre-development and post-development conditions are depicted in Figure 4.1-6.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| Cultural Modifications | -1 | -1 | 0 | No Impact |
| *Explanation:* | Man-made modifications in this view include the dirt trail, wind turbines, and solar facilities. These modifications, especially the latter two, are discordant and promote disharmony in the existing physical environment. | The project would not be visible from this viewpoint and would thus not add or remove any cultural modifications. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not add or remove any cultural modifications. There would be no impact. | | | |
| **Totals:** | **13** | **13** | **0** | **No Impact** |

Existing View

Proposed View

**Figure 4.1-6: KOP 5: EXISTING AND SIMULATED VIEWS FROM THE PCT LOOKING SOUTH/SOUTHEAST TOWARD THE PROJECT SITE**

**KOP 6. Figure 4.1-7**, *Existing and Simulated Views from the PCT Looking South/Southeast Toward the Project Site*, represents what PCT recreationalists would see when looking south/southeast toward the project. The existing view from KOP 6 includes: native desert scrub vegetation in the foreground; a foothill ridge; a roadway cut into the ridge; wind turbines in the middleground; and solar facilities and mountains in the background. The post-development view is identical to the pre-development view, as the proposed solar facilities would be blocked by the ridge from this viewpoint. As shown in **Table 4.1-10**, *Visual Quality Rating Analysis – KOP 6*, the pre-development score is 12 and the post-development score is 12. Since the difference in scores would be 0 points, there would be no visual impacts at KOP 6.

**TABLE 4.1-10: VISUAL QUALITY RATING ANALYSIS – KOP 6**

**Sensitive Receptor: PCT Recreationalists**
**Pre-development and post-development conditions are depicted in Figure 4.1-7.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| Landform | 3 | 3 | 0 | No Impact |
| *Explanation:* | The edge of a dirt trail along a ridge is visible in the foreground, along with a rolling foothill that forms a ridgeline in the middleground. A flat valley area is visible past the ridgeline, along with distant mountains in the background. A road has been cut into the foothill below the ridgeline, and wind turbines and solar facilities visible in the flat valley area. | The project would not be visible from this viewpoint and would thus not modify the existing view's topography. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify the existing view's topography. There would be no impact. | | | |
| Vegetation | 2 | 2 | 0 | No Impact |
| *Explanation:* | Low-lying desert scrub vegetation can be seen clearly in the foreground and middleground and less clearly in the background due to distance. | The project would not be visible from this viewpoint and would thus not modify the existing vegetation. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify the existing view's vegetation. There would be no impact. | | | |
| Water | 1 | 1 | 0 | No Impact |
| *Explanation:* | No water is visible from this viewpoint. There are no clear landforms that could hold water. | The project would not be visible from this viewpoint and would thus not modify the existing view (regardless of the presence of water features). | | |

**TABLE 4.1-10: VISUAL QUALITY RATING ANALYSIS – KOP 6**

**Sensitive Receptor: PCT Recreationalists**
**Pre-development and post-development conditions are depicted in Figure 4.1-7.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify the existing view in any way. There would be no impact. | | | |
| Color | 2 | 2 | 0 | No Impact |
| *Explanation:* | There is low to moderate variation in color visible from this viewpoint. Shades of brown, yellow, green, and red are visible throughout the foreground, middleground, and background associated with soil and vegetation. Shades of brown, gray, and blue associated with the foothills and mountains can be seen in the middleground and background. Shades of white and gray are visible in the background associated with existing wind turbines and distant solar facilities. | The project would not be visible from this viewpoint and would thus not modify the existing colors in the viewpoint. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify existing colors. There would be no impact. | | | |
| Adjacent Scenery | 4 | 4 | 0 | No Impact |
| *Explanation:* | Adjacent scenery, including native desert vegetation as well as foothills and mountains, enhances visual quality. | The project would not be visible from this viewpoint and would thus not modify any existing adjacent scenery. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not modify existing adjacent scenery. There would be no impact. | | | |
| Scarcity | 2 | 2 | 0 | No Impact |
| *Explanation:* | The view includes desert scrub vegetation, a dirt trail, foothills, and distant mountains, as well as distant wind turbines and solar facilities. There are no unique or unusual aspects from this view because similar viewsheds exist along the PCT. | The project would not be visible from this viewpoint and would thus not alter the scarcity of the viewpoint. | | |

**TABLE 4.1-10: VISUAL QUALITY RATING ANALYSIS – KOP 6**

**Sensitive Receptor: PCT Recreationalists**
**Pre-development and post-development conditions are depicted in Figure 4.1-7.**

| Rated Feature | Pre-Development Condition | Post-Development Score | Difference in Scores | Impact Significance |
|---|---|---|---|---|
| *Detail:* | The project would not be visible from this viewpoint and would thus not alter the scarcity of the viewpoint. There would be no impact. | | | |
| Cultural Modifications | -2 | -2 | 0 | No Impact |
| *Explanation:* | Man-made modifications in this view include the dirt trail, roadway cut into the foothill, distant wind turbines, and distant solar facilities. These modifications, especially the latter three, are discordant and promote disharmony in the existing physical environment. | The project would not be visible from this viewpoint and would thus not add or remove any cultural modifications. | | |
| *Detail:* | The project would not be visible from this viewpoint and would thus not add or remove any cultural modifications. There would be no impact. | | | |
| **Totals:** | **12** | **12** | **0** | **No Impact** |

Existing View

Proposed View

**Figure 4.1-7: KOP 7: EXISTING AND SIMULATED VIEWS FROM THE PCT LOOKING SOUTH/SOUTHEAST TOWARD THE PROJECT SITE**

## *Summary*

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. Using the BLM scale (as discussed in Section 4.1.4 under the Methodology Section) to analyze the scores in Tables 4.1-5 through 4.1-10 above, KOPs 2, 4, 5 and 6 have an above-average visual quality and all remaining KOPs have an average visual quality. As shown in Tables 4.1-5 through 4.1-10, implementation of the proposed project would result in less-than-significant impacts resulting from a change to the area's visual quality and visual character at KOPs 1 and 4. There would be no impact to visual quality and character at the other four KOPs.

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. As shown in visual simulations, the introduction of the solar panels would alter the visual character of the project site at certain viewpoints. The proposed project would interconnect to the existing Manzana Wind 230 kV gen-tie and would thus not involve gen-tie line construction. Energy would be transferred to the Whirlwind Substation to connect to this gen-tie line.

Although the proposed project would be generally well sited for efficiency of energy generation, would minimize of visual impacts due to its collocation with an existing wind project; would share existing energy infrastructure; is not near a recognized scenic area; and has low impacts on neighboring land uses; the contrast of the industrial nature of the facilities with the partially undeveloped and open desert viewshed present onsite would modify the existing visual character of the landscape as viewed by some sensitive receptors for the life of the proposed project. The proposed project facilities would add cultural modifications to the project site's landscape from these viewpoints. However, as explained in this analysis, increased cultural modifications from the project itself would not be substantial. Mitigation Measures MM 4.1-1 through MM 4.1-3 would help to further reduce visual impacts associated with the proposed project by limiting vegetation removal, planting native vegetation, color treating project facilities, and ensuring that the site is kept free of debris and trash. Thus, impacts would be less-than-significant with mitigation incorporated.

## *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 to for review and approval the Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM). The program shall include, but not be limited to the following:

1. 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.
2. 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 and BLM.

3. 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.

4. Trash and food items shall be contained in closed secured containers at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.

**MM 4.1-2:** Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall provide evidence for the following:

The project proponent/operator shall identify and submit a proposed color scheme and treatment plan 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. The submitted color scheme and treatment plan shall be reviewed and approved by the Planning Director and the Bureau of Land Management (BLM) and the project shall continually comply with the approved plan.

**MM 4.1-3:** Wherever possible, within the proposed project boundary the natural vegetation shall remain undisturbed. Where disturbance of natural vegetation is necessary that disturbance shall occur in the manner that results in the greatest retention of root balls and native topsoil with mowing being the preferred and primary method of clearing. All natural vegetation adjacent to the proposed project boundary shall remain in place. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM) for review and approval. The plan shall include the measures detailed below.

1. 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.

2. The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, and a clear prohibition of the use of toxic rodenticides.

3. 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 and BLM 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).

4. Vegetation/ground cover shall be continuously maintained on the site by the project operator.
5. 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 and BLM for the three-year period. Should efforts to revegetate soil prove in the second year to not be successful, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department and the BLM 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*

With implementation of Mitigation Measures MM 4.1-1 through 4.1-3, impacts would be less-than-significant.

## Cumulative Setting Impacts and Mitigation Measures

As described in Chapter 3, *Project Description* of this EIR/EA, multiple projects, including several utility-scale solar and wind energy production facilities, are proposed throughout the Antelope Valley. Other energy development projects (including solar and wind) have the potential to result in cumulative impacts to aesthetics when considered together with the proposed project. As shown in Table 3-5, *Cumulative Project List*, in Chapter 3, *Project Description*, a total of 17 solar projects are proposed, under construction, or operational within the vicinity of the proposed project. This includes 9 solar projects in eastern Kern County. In addition, there are a total of 8 non-solar projects proposed, under construction, or operational in eastern Kern County. These have the potential to result in cumulative impacts to aesthetics when considered together with the proposed project.

As discussed above, the proposed project would result in less-than-significant impacts related to scenic vistas as viewed from the PCT. At some locations along the PCT, the existing topography of the landscape between the PCT and the proposed solar facility would shield it from the view of recreationalists entirely. In other PCT locations, the proposed project would be visible on the low-lying flat valley in the distance. The proposed project would be located approximately 1 mile from the PCT at its closest point and would not take up a large portion of these scenic vistas. As noted previously, the U.S. Department of the Interior is seeking to reroute the portion of the PCT nearest to the proposed project through a different alignment across the Tehachapi Mountains on the Tejon Ranch. If this reroute occurs in the future, it is expected to move the PCT further from the proposed project.

Although the proposed project would result in less-than-significant impacts related to visual character and quality of its surroundings, the proposed project would impact views from three of six KOPs with regard to added cultural modifications. In combination with other projects, particularly the wind turbines and other solar development that exist near the project site, the proposed project would contribute to added cultural modifications in the project area. The "cultural modifications" rating criterion for visual character and quality is likely to be incrementally increased by each additional energy development project, as this development creates a general disharmony with the still mostly undeveloped desert landscape. Mitigation Measures MM 4.1-1 through MM 4.1-6 would help to reduce visual impacts associated with the proposed project by ensuring compliance with the applicable provisions of the Kern County Dark Skies Ordinance, requiring trash abatement, requiring color treatment project facilities, vegetation maintenance and restoration, glare minimization, and the use of non-reflective materials. While other projects in the region would be required to implement similar mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. Thus, the proposed project's contribution to cumulative impacts associated with aesthetics would be significant and unavoidable.

## Mitigation Measures

### *Implement Mitigation Measures 4.1-1 through 4.1-3.*

**MM 4.1-4:** Prior to final activation of the solar facility, the project proponent shall demonstrate to County Staff and the Bureau of Land Management (BLM) that the project site complies with the applicable provisions of the Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance), and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.

**MM 4.1-5:** Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM).

**MM 4.1-6:** Prior to final activation of the solar facility, the project operator shall demonstrate that all on-site buildings utilized nonreflective materials, as approved by the Kern County Planning and Natural Resources and Bureau of Land Management (BLM).

## Level of Significance after Mitigation

Even with implementation of Mitigation Measures MM 4.1-1 through 4.1-6, impacts would remain significant and unavoidable.

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Section 4.2
# Agriculture and Forest Resources

## 4.2.1 Introduction

This section of the EIR/EA describes the affected environment and regulatory settings for agriculture and forest resources for the proposed project. It also describes the impacts on agricultural and forest resources that would result from the implementation of the proposed 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)* prepared by the Department of Agriculture and Measurement Standards.

## 4.2.2 Environmental Setting

### Regional Setting

As of 2016, Kern County includes approximately 880,102 acres of important farmland, which consists of prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance, and approximately 1,849,266 acres of grazing land, including Bureau of Land Management (BLM) grazing allotments. According to the 2018 Kern County Agricultural Crop Report, agriculture in Kern County was worth $7.47 billion, an increase of 3 percent from the 2017 crop value. The top five commodities in 2018 were grapes, almonds, citrus, milk, and pistachios, 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 (Department of Agriculture and Measurement Standards, 2018).

Kern County is growing rapidly and ranks high on the list of California counties with issues related to urbanization and the loss of farmland. As shown in **Table 4.2-1,** *Agricultural Land Use Designation Conversions 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). **Figure 4.2-1**, *Farmland in Kern County*, includes the categories of Important Farmland, grazing land, and other land that was converted to non-agricultural uses. (Note: These various farmland designations are defined in Section 4.2.3, *Regulatory Setting*, below).

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, growing from today's population of approximately 905,801 (KEDC 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. In addition, a significant amount of the important farmland in the County has been converted

to grazing land over the past several years, which contributes to the overall loss of agricultural land in the County.

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

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

SOURCE: Kern County, 2018.

# Local Setting

The proposed project site totals approximately 383 acres, consisting of 150 acres of private lands and 233 acres of BLM Public Lands. The proposed project is located in a sparsely populated area of Western Mojave Desert with relatively low density of sensitive plant and animal species. The elevation for the project area ranges between 3,350 feet above mean sea level (amsl) to approximately 3,800 feet amsl, and topography generally slopes downward to the south. The proposed project site is relatively flat.

The parcels are located on rural, generally undeveloped land, adjacent to the Manzana Wind Power Project. Unimproved gravel roads are located throughout the property and surrounding area. Surrounding land uses include wind and solar energy projects and undeveloped land. The southern portion of the proposed project site includes an operations and maintenance building and a laydown area, including a water storage tank, above ground propane tanks, electrical transformers, and shipping containers.

## Project Site Designation

The proposed project site has the Kern County General Plan land use designations of 8.3 (Extensive Agriculture); 8.5 (Resource Management); 1.1 (State or Federal Land); and 8.3/2.1 (Extensive Agriculture/Seismic Hazard). The Kern County Zoning Ordinance designates portions of the project site as being within the A (Exclusive Agriculture) zone district; A WE (Exclusive Agriculture and Wind Energy combining) zone district; and A GH WE (Exclusive Agriculture, Geologic Hazard combining, and Wind Energy combining) zone district. The BLM-administered parcel is zoned as OS (Open Space). The project site is also within Kern County Agricultural Preserve Number 24, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture). This includes the portions of the project site that are currently zoned A WE (Exclusive Agriculture and Wind Energy combining; and as A GH WE (Exclusive Agriculture, Geologic Hazard combining, and Wind Energy 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 (Kern County Ordinance 19.12.030.G). See Figure 3-4, *Existing General Plan Designations*, and 3-5, *Existing Zoning Classifications*.

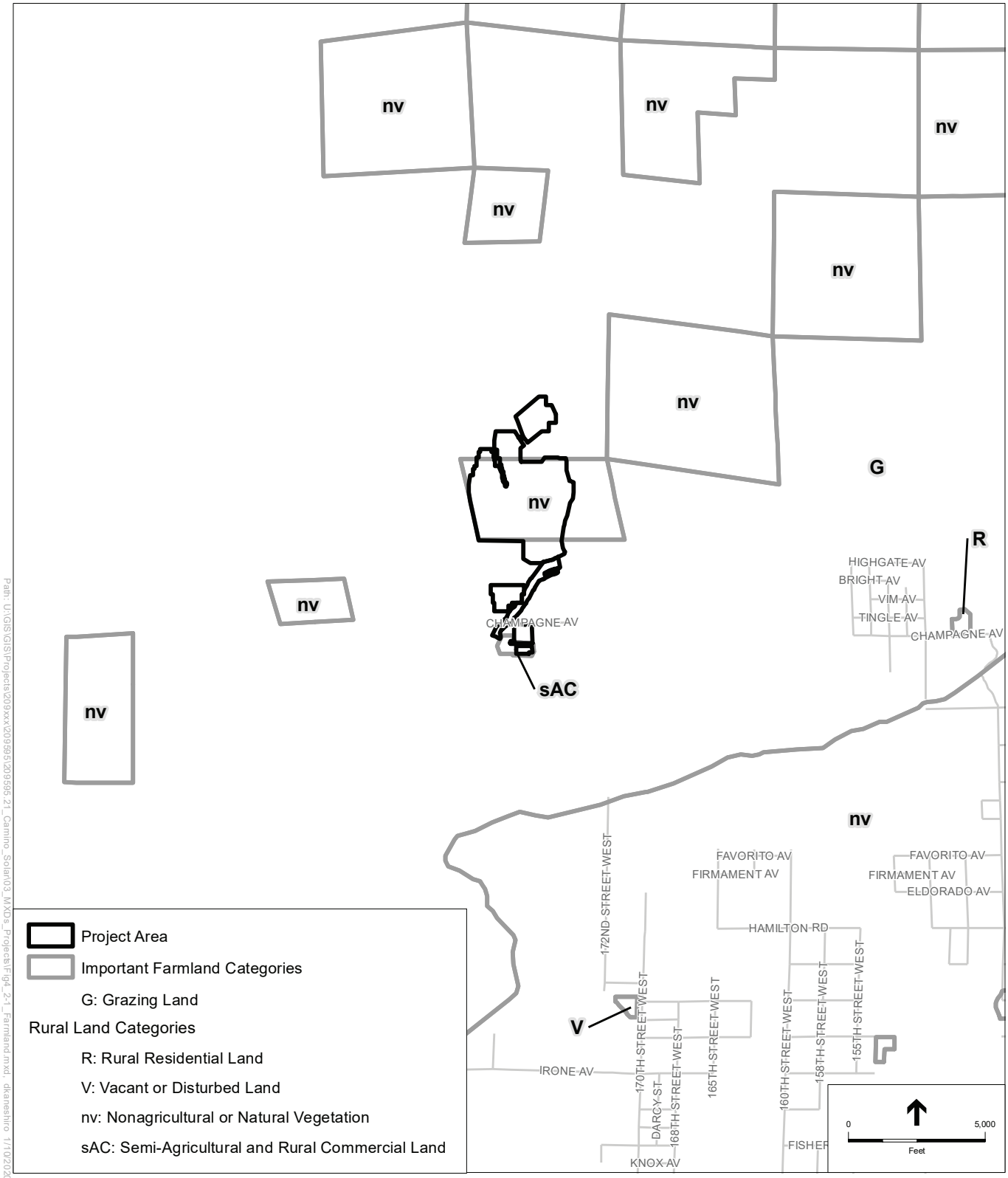


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**Figure 4.2-1: FARMLAND IN KERN COUNTY**

The project site is not designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. The Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) designates the private portion of the project site as G, grazing land, and the federal (BLM) portion of the project site as NV (nonagricultural or natural vegetation) (DOC 2017).

## Existing Grazing Allotments

The 233-acre BLM-administered portion of the project site is located within the 7,871-acre Antelope Valley grazing allotment administered by the BLM Ridgecrest Field Office (BLM 2005b and 2018a) (see **Figure 4.2-2,** *Antelope Valley Grazing Allotment*). The current authorization is for ephemeral sheep grazing under Section 15 of the Taylor Grazing Act. However, that grazing permit expired in February 2019. The Antelope Valley grazing allotment has been authorized since 1980, in accordance with the California Desert Conservation Area (CDCA) Plan, for ephemeral grazing in years when forage is available (BLM 1980).

The Antelope Valley grazing allotment is relatively isolated from other ephemeral sheep allotments within the region. The Double Mountain and Oak Creek allotments are the only allotments within 10 miles of the project site. Both the Bissell and Warren allotments are located within 20 miles of the project site, and the Boron and Cantil allotments are within 30 miles of the project site. Grazing lease holders that currently use designated allotments for grazing their sheep were given a written two year notice by BLM, as required by BLM Instruction Memorandum Number 2011-181, that the lease holders will no longer be able to use the proposed project area for ephemeral grazing, due to the construction and operation of the proposed project.

## Soils

The United States Department of Agriculture (USDA) Soil Conservation Service, National Cooperative Soil Survey classifies soils throughout the country. According to the geotechnical report, the USDA soil units identified on the project site include the Arizo gravelly loamy sand, Cajon loamy sand, Hanford coarse sandy loam and gravelly sandy loam, and Ramona sandy loam (Barr 2017). These soils are well drained or excessively drained loams with moderate to high infiltration rates.

Sedimentary deposits at the project site consist of Quaternary sedimentary deposits of coarse sand, gravel, and cobble agglomerate. The alluvium forms a dissected fan of detritus derived from nearby crystalline rocks of the Tehachapi Mountains.


**Figure 4.2-2: ANTELOPE VALLEY GRAZING ALLOTMENT**

# 4.2.3 Regulatory Setting

## Federal

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

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

FPPA assures that, to the extent possible, federal programs are administered to be compatible with State, and local units of government, and private programs and policies to protect farmland.

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

The FPPA does not authorize the Federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners. Projects are subject to FPPA requirements if they irreversibly convert farmland (directly or indirectly) to non-agricultural use and are completed by a Federal agency or rely on assistance from a Federal Agency (USDA, 2015).

### *The Taylor Grazing Act of 1934*

The Taylor Grazing Act of 1934 (43 USC 315) is intended to regulate grazing on public lands, with the exclusion of Alaska; prevent deterioration of rangeland by overgrazing; and provide for long-term management of grazing districts for the benefit of the livestock industry that utilized public rangelands (BLM 2011).

### *Federal Land Policy and Management Act*

The Federal Land Policy and Management Act of 1976 (FLPMA) establishes public land policy; provides guidelines for administration; provides for the management, protection, development, and enhancement of public lands; and, per Title V, Section 501, establishes the BLM's authority to grant rights-of-way for generation, transmission, and distribution of electrical energy (BLM 2001).

### *Public Rangelands Improvement Act*

The Public Rangelands Improvement Act of 1978 establishes and reaffirms the national policy and commitment to inventory and identify current public rangeland conditions and trends and to manage, maintain, and improve the condition of public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process. This act

also establishes the policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros that pose a threat to themselves and their habitat and to other rangeland values (PRIA 1978).

### *California Desert Conservation Area Plan*

The CDCA (1980, as amended) provides a comprehensive, long-range plan with goals and specific actions for the management, use, development, and protection of the resources and public lands within the CDCA; it is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality.

### *Desert Renewable Energy Conservation Plan*

In 2016, the Desert Renewable Energy Conservation Plan (DRECP) was approved following an 8-year collaboration with federal and state resource agencies. The DRECP amended the CDCA Plan, replacing the multiple use classifications with designated specific geographic areas defined as "Development Focus Areas" deemed suitable for renewable energy generation and production, and Variance Process Lands subject to variance process for land use approval. The proposed project is located within DRECP Variance Process Lands. The project would comply with all applicable DRECP Conservation Management Actions (CMAs). For a consistency analysis of the project relative to the DRECP's CMAs see Appendix M-2.

### *West Mojave Plan*

The West Mojave Plan (WEMO) (2006) is a habitat conservation plan and CDCA Plan amendment that contains more than nine million acres of land north of the Los Angeles metropolitan area within Inyo, Kern, Los Angeles, and San Bernardino Counties. The WEMO is aimed at presenting a comprehensive conservation and protection strategy for nearly 100 sensitive plants, animals, and habitat communities, including the desert tortoise and Mojave ground squirrel, and providing a concise framework for complying with the California Endangered Species Act and the federal Endangered Species Act.

### *BLM Instruction Memorandum Number 2011-181 (2011)*

The BLM Instruction Memorandum Number 2011-181 clarifies when BLM Field Offices will notify a grazing permittee/lessee that a solar or wind energy development application may affect a livestock grazing operation and requires that when public lands are disposed of or devoted to a public purpose that precludes livestock grazing, the permittee/lessee shall be given 2 years' prior notification (except in cases of emergency) before the grazing permit/lease and grazing preference may be canceled. The memorandum addresses potential mitigation and compensation strategies and the relationship of energy application steps/decisions with grazing administrative steps/decisions. The memorandum also includes a discussion of mitigation and compensation strategies that address loss of forage, access for management purposes, or other items, to provide for expeditious processing of the application for solar or wind development. According to the memorandum, the applicant and the permittee/lessee should be strongly encouraged to enter into an agreement that addresses mitigation and compensation strategies to be submitted concurrent with the Plan of Development, but the BLM will not directly participate in these discussions. The memorandum specifies that the BLM is not responsible for any mitigation or compensation agreed upon by the parties in these agreements.

# State

## California Department of Conservation, 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 project site is not designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. The DOC Farmland Mapping and Monitoring Program (FMMP) designates the private portion of the project site as G, grazing land, and the federal (BLM) portion of the project site as NV (nonagricultural or natural vegetation) (DOC 2017).

The list below describes the categories mapped by the DOC (DOC 2016) through the FMMP. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to as "farmland."

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

**Farmland of Statewide Importance.** Farmland that is similar to Prime Farmland but with minor shortcomings, such as greater slopes or lower moisture content. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

**Unique Farmland.** Land with lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include land that supports non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been used for crops at some time during the four years prior to the mapping date.

**Farmland of Local Importance.** Land that is important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

**Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups with an interest in grazing activities.

**Urban and Built-Up Land.** Land that is developed with structures that have been built to a density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land supports residential, industrial, commercial, institutional, public administrative uses; railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment facilities; water control structures; and other developed uses.

**Other Land.** Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Undeveloped and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

## California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act (California Government Code Section 51200-51297.4, is applicable to specific parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under a Williamson Act Contract. The Williamson Act program is administered by the DOC, in conjunction with 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, which is voluntary for landowners (DOC, 2015).

Under a Williamson Act contract, 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 if 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 classification. 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 that can be permitted under a use permit (DOC, 2015).

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. Section 51238 states that the 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 or 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 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 growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses.

## Public Resources Code (PRC) Section 21060.1

PRC Section 21060.1 uses the Farmland Mapping and Monitoring Program (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

The solar facilities would encompass approximately 339 acres on 10 separate parcels. The proposed project site consists of approximately 95 acres of privately owned land, subject to agricultural designations and classifications established by the Kern County General Plan and the Kern County Zoning Ordinance. Such regulations control local land uses within agricultural areas. Specifically, they identify the types of land uses permitted in agricultural zones and define development parameters within each land use category. One approximately 244-acre parcel is owned by the United States government and managed by the BLM and is therefore not subject to Kern County regulations. As such, the BLM parcel is being address with an Environmental Assessment provided within this EIR/EA document and is subject to DRECP standards.

### Kern County General Plan

The Kern County General Plan (KCGP) 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;
>
> **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; and
>
> **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. A 680-acre portion of the proposed project site parcels is designated 8.3 Extensive Agriculture.

**8.5 Resource Management (minimum parcel size 20 acres gross, except lands subject to a Williamson Act contract/Farmland Security Zone contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands consisting primarily of open space containing important resource values, such as wildlife habitat, scenic values, or watershed recharge areas. These areas may be characterized by physical constraints, or may constitute an important watershed recharge area or wildlife habitat or may have value as a buffer between resource areas and urban areas. Other lands with this resource attribute are undeveloped, non-urban areas that do not warrant additional planning within the foreseeable future because of current population (or anticipated increase), marginal physical development, or no subdivision activity.

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 KCGP for agricultural resources applicable to the proposed project are provided below. The KCGP contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the proposed project. Therefore, they are not listed below, but as stated in Chapter 2, *Introduction*, of this EIR/EA, all policies, goals, and implementation measures in the KCGP are incorporated by reference. The policies, goals and implementation measures in the KCGP for agricultural resources that are applicable to the proposed project are provided below.

### *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 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 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.

## 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. Section 19.02.030 of the zoning ordinance states in part that it applies to all property in unincorporated Kern County, including property owned by the State of California, however, any governmental agency shall be exempt from the provisions of the zoning ordinance to the extent that such property may not be lawfully regulated by the County of Kern.

As previously mentioned in Chapter 3, *Project Description*, and as described in 4.2.2, *Local Setting*, the Kern County Zoning Ordinance designates portions of the project site as being within the A (Exclusive Agriculture) zone district; A WE (Exclusive Agriculture and Wind Energy combining) zone district; and A GH WE (Exclusive Agriculture, Geologic Hazard combining, and Wind Energy combining) zone district. The BLM-administered parcel is zoned as OS (Open Space). The project site is also within Kern County Agricultural Preserve Number 24, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture); this includes the portions of the project site that are currently zoned A WE (Exclusive Agriculture and Wind Energy combining) and as A GH WE (Exclusive Agriculture, Geologic Hazard combining, and Wind Energy combining). Permitted uses within A Exclusive Agriculture zone are set forth in Section 19.12.020 and include agricultural uses, residential uses, commercial uses, utility and communications facilities, resource extraction and energy development uses, and miscellaneous uses. Permitted uses within the WE Wind Energy zone are set forth in Section 19.64.020 and include wind-driven electrical generators and accessory administrative and maintenance structures and facilities, electrical substations, transmission lines, and other facilities and electrical structures that are accessory and incidental to the main use. Permitted uses within GH Geological Hazard zone are set forth in Section 19.68.020 and are those uses permitted by the base district with which the GH District is combined (A Exclusive Agriculture), except as modified in accordance with the standards and procedures set out in Sections 19.68.130 through 19.68.150. Permitted uses within OS Open Space zone are set forth in Section 19.44.020 and include agricultural uses, recreation, entertainment, and tourist facilities, utility and communications facilities, and miscellaneous uses.

# 4.2.4 Impacts and Mitigation Measures

This section of the EIR/EA describes the impact analysis relating to agricultural and forest resources for the proposed project. It describes the methods used to determine the impacts of the proposed 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.

## Methodology

The proposed project's potential impacts on agriculture and forest resources have been evaluated on a qualitative basis by reviewing the *Kern County Agricultural Crop Report* (2018), the 2016 DOC Important Farmland Map, and the updated annual Kern County General Plan Report (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, project –specific *Phase 1 Environmental Site Assessment* provided in Appendix H of this EIR/EA, 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 a Williamson Act Contract.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Productions (as defined by Government Code Section 51104(g)).

d. Result in the loss of forest land or conversion of forest land to non-forest use.

e. Involve other changes in the existing environment that, because of their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.

f. Result in the cancellation of an open space contract made pursuant to the California Land Conservancy Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15205(b)(3) Public Resources Code).

Kern County determined in the 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, these topics will not be evaluated further in this EIR/EA. Please refer to Appendix A of this EIR/EA for a copy of the NOP/IS and additional information regarding these issue areas:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to nonagricultural use.

b. Conflict with existing zoning for agricultural use or a Williamson Act Contract.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

d. Result in the loss of forestland or conversion of forestland to non-forest use.

f. Result in the cancellation of an open space contract made pursuant to the California Land Conservancy Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15205(b)(3) Public Resources Code).

As detailed in the NOP/IS, there is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project area. Therefore, construction and/or operation of the proposed project would not result in the conversion of designated Farmland to a nonagricultural use. Additionally, none of the parcels included as part of the proposed project or property in the vicinity of the project are subject to a Williamson Act Land Use contract, and implementation of the proposed project would not result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Public Resources Code Section 15206(b)(3)). The closest Williamson Act land is located approximately 2 miles west of the project site. Additionally, as discussed in Section 4.10, *Hydrology and Water Quality*, the project site is located within the Antelope Valley Groundwater Basin, most of which has been over drafted and is currently an adjudicated area for groundwater management, which limits the availability of water for farming purposes. The proposed discretionary actions do not involve farming uses and are consistent with the Kern County Zoning Ordinance regulations for agricultural and resource management uses. Therefore, the potential for conflicts with Williamson Act Land Use contract are not anticipated and are considered to have no impact. There is no land in the vicinity of the project site that is zoned as forest land, timberland, or lands zoned for timberland production. Thus, there would be no impacts related to loss of forest land or timberland, or the conversion of forest land to non-forest use. Therefore, no further analysis of these impacts is warranted in this EIR/EA.

# Project Impacts

### Impact 4.2-1: 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 of conversion of forest land to non-forest use.

The project site consists of undeveloped land dominated by native desert vegetation and surrounded by an existing wind energy facility. Although portions of the project site are currently zoned for agricultural uses, the site is not currently used for agriculture. 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. The proposed project is located within the boundaries of the Antelope Valley grazing allotment, administered by the BLM Ridgecrest Field Office, as described in 4.2.2, *Local Setting*. The project site is currently not used for grazing, as the BLM sent notification of all grazing lease cancellations to the property owners two years ago as prescribed by BLM Instruction Memorandum Number 2011-181. Although implementation of the proposed project would preclude livestock grazing

onsite, it would only result in loss of 3 percent of the entire Antelope Valley allotment. The proposed project would not involve additional changes to the existing environment besides those described in this Draft EIR/EA. Therefore, while the proposed project would contribute to the direct loss of grazing land, disturbance to the Antelope Valley grazing allotment related to development of the proposed project would be approximately 233 acres, which would be less than significant as the Antelope Valley grazing allotment contains 7,871 acres.

At the end of the proposed project's operational term (approximately 35 years), the project proponent may determine that the project site should be decommissioned and deconstructed. Because the PV arrays' supporting equipment sit on the surface of the land, when the arrays are removed after the project's lifetime, the land would be largely unaltered from its natural state, and native vegetation would return over time. Additionally, the project proponent would work with the County to put an agreement in place that will ensure the decommissioning of the project site after its productive lifetime per Mitigation Measure MM 4.11-1, as discussed in Section 4.11, *Land Use and Planning*. The majority of the project site would be returned to a state conducive to livestock grazing. Therefore, for the reasons described above, the use of solar facilities on the project site would not result in permanent changes in the existing environment that, due to location or nature, would result in permanent conversion of farmland to nonagricultural use, and impacts would be less-than-significant.

### *Mitigation Measures*

No mitigation measures would be required.

### *Level of Significance*

Impacts would be less than significant.

## Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope analyzed for cumulative impacts is the 7,871-acre Antelope Valley grazing allotment area, which includes the project site. The Antelope Valley grazing allotment is relatively isolated from other ephemeral sheep allotments within the region. The Double Mountain and Oak Creek allotments are the only allotments within 10 miles of the project site. Both the Bissell and Warren allotments are located within 20 miles of the project site, and the Boron and Cantil allotments are within 30 miles of the project site.

Within the Antelope Valley allotment, several types of development projects have the potential to contribute to the cumulative impact of the proposed project to impact livestock grazing, particularly other renewable energy projects, which can affect large areas of rangelands. These types of reasonably foreseeable projects could combine with potential impacts of the project within the Antelope Valley allotment. However, as shown in **Figure 4.2-3**, *Cumulative Projects within the Antelope Valley Grazing Allotment*, no existing developments or other renewable energy projects within the Antelope Valley allotment are known at this time. Additionally, other than the proposed project, no reasonably foreseeable projects that may impact livestock grazing within the Antelope Valley allotment are anticipated within 6 miles of the project site, as listed in Table 3-5, *Cumulative Projects List* of Chapter 3, *Project Description*. Since the majority of the existing and proposed development and renewable energy projects included in the cumulative projects list are not located on BLM lands, the construction, operation and maintenance, and decommissioning of these projects would not result in the direct conversion of grazing acreage within the Antelope Valley allotment.

Although no existing developments within the Antelope Valley allotment are known at this time, developments exist adjacent to, or in the immediate vicinity of, several parcels within the Antelope Valley grazing allotment. Potential indirect effects on the allotment from these adjacent developments may include access issues and increased noise and dust emissions. Because of the proximity of the cumulative projects to rangelands, indirect impacts to grazing may occur; however, these impacts would be similar to those which already exist under current cumulative conditions. Given that the cumulative projects that would be located within the Antelope Valley allotment would not significantly reduce available allotted areas for grazing, indirect impacts would be less-than-significant. Additionally, similar to the proposed project, other potential energy projects in Kern County would be required to implement a mitigation measure similar to Mitigation Measure MM 4.11-1, as described in Section 4.11, *Land Use and Planning*, which requires the project proponent to work with the County to put an agreement in place that will ensure the decommissioning of the project site after its productive lifetime. This mitigation measure would ensure that the land would be largely unaltered from its natural state and native vegetation would return over time and be available again for grazing, and thus would further reduce impacts to less-than-significant levels. Therefore, the proposed project would have a less than significant, direct and indirect, incremental contribution related to changes in the existing environment that, because of their location or nature, would result in conversion of farmland to nonagricultural use. As such, the proposed project would not result in cumulative agricultural impacts.

### *Mitigation Measures*

No mitigation measures would be required.

### *Level of Significance*

Cumulative impacts would be less than significant.


**Figure 4.2-3: CUMULATIVE PROJECTS WITHIN THE ANTELOPE VALLEY GRAZING ALLOTMENT**

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Section 4.3
# Air Quality

## 4.3.1 Introduction

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

Information in this section is based primarily on the project's air quality technical report, *Air Quality and Greenhouse Gas Impact Analysis for the Proposed Camino Solar Project* (Ambient 2017) located in Appendix C of this EIR/EA. 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*.

## 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), 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. The MDAB is separated from the South Coast Air Basin to the south, by the San Gabriel and San Bernardino Mountains; and from the San Joaquin Valley Air Basin to the northwest, by the Tehachapi Mountains and the southern end of the Sierra Nevada Mountains.

### Topography and Meteorology

Air pollution, especially the dispersion of air pollutants, is directly related to a region's topographic features. Air quality is a function of both the rate and location of pollutant emissions and the meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects ambient air quality.

The project site is located in the southern central portion of Kern County in central California in the MDAB and is within the jurisdiction of the EKAPCD. The project site is approximately 15 miles west of California State Route (SR-14), 12.5 miles south of California State Route 58 (SR-58), and 8 miles north of California State Route 138 (SR-138 or West Avenue D). The nearest populated areas are the unincorporated community of Rosamond approximately 16 miles southeast, and the City of Tehachapi approximately 12 miles to the north. The proposed project encompasses approximately 383 acres, which include 233 acres of public lands administered by the Bureau of Land Management (BLM) Ridgecrest Field Office and 150 acres of privately-held lands. The project site is located on generally undeveloped rangeland.

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 Kern 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.

Land uses in the project area are largely undeveloped and zoned for agricultural use. The nearest residential dwelling is located approximately 1.2 miles west of the project site. The closest school to the project site is Tropico Middle School, which is located approximately 13 miles southeast of the proposed project site in the community of Rosamond. The nearest populated areas are the unincorporated community of Rosamond, located approximately 16 miles to the southeast, and the City of Tehachapi, located approximately 12 miles to the north. The unincorporated community of Mojave is located approximately 17 miles to the northeast.

# 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. Both state of California and the federal government have established ambient air quality standards for several different pollutants, a summary of which is shown in **Table 4.3-1**, *National and State Criteria Pollutant Standards and EKAPCD Attainment Status*, below. For some pollutants, separate standards have been set for different time periods. Most standards have been set to protect public health. For other pollutants, standards have been based on some other value (such as protection of crops, protection of materials, or avoidance of nuisance conditions).

As required by the federal Clean Air Act (CAA), the United States Environmental Protection Agency (USEPA) has identified criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone ($O_3$), carbon monoxide (CO), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), particulate matter (PM) (specifically $PM_{10}$ and $PM_{2.5}$), and lead (Pb). These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, 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.

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 proposed project and, thus, these pollutants are not addressed further in this EIR/EA.

**Table 4.3-1,** *National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District Attainment Status*, presents both sets of ambient air quality standards (i.e., national and state) as well as attainment status for each of these standards within the EKAPCD jurisdiction. If a pollutant concentration in an area is lower than the established standard, the area is classified as being in "attainment" for that pollutant. If the pollutant concentration meets or exceeds the standard (depending on the specific standard for the individual pollutants), the area is classified as a "nonattainment" area. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified."

As shown in Table 4.3-1, the southern portion of the EKAPCD, where the proposed project is located, is currently classified as nonattainment for the California 1-hour and 8-hour ozone standards and $PM_{10}$ standards, 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**

| | | California Standards | | National Standards | |
|---|---|---|---|---|---|
| **Pollutant** | **Averaging Time** | **Concentration** | **Attainment Status** | **Primary** | **Attainment Status** |
| Ozone ($O_3$) | 1-hour | 0.09 ppm | Nonattainment | – | Attainment |
| | 8-hour | 0.070 ppm | Nonattainment | 0.070 ppm | Nonattainment |
| Particulate Matter ($PM_{10}$) | AAM | 20 µg/m$^3$ | Nonattainment | – | Attainment Maintenance |
| | 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 due to particles when the relative humidity is less than 70%. | Unclassified | | |

NOTES: AAM = annual arithmetic mean; ppm = parts per million; µg/m$^3$ = micrograms per cubic meter

SOURCES: CARB 2016a; 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, $PM_{10}$, and $PM_{2.5}$. Measured concentrations of $NO_2$ 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 $SO_2$ for the past three years. Ambient monitoring data obtained for 2015 through 2017 is summarized below in **Table 4.3-2**, *Air Quality Data Summary (2015-2017)*.

**TABLE 4.3-2: AIR QUALITY DATA SUMMARY (2015-2017)**

| | Monitoring Year | | |
|---|---|---|---|
| **Pollutant** | **2016** | **2017** | **2018** |
| **Ozone ($O_3$)[1]** | | | |
| 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 state/national 8-hour standard exceeded | 52/29 | 35/16 | 53/23 |
| **Nitrogen Dioxide ($NO_2$)[2]** | | | |
| Maximum concentration (1-hour average) | 48.8 | 46.5 | 47.6 |
| Annual average (state) | 8 | NA | 8 |
| Number of days state/national standard exceeded | 0/0 | 0/0 | 0/0 |
| **Suspended Particulate Matter ($PM_{2.5}$)[1]** | | | |
| Maximum concentration (24-hour) | 25.7 | 26.9 | 39.0 |
| Annual Average (national/state) | 7.4 | 5.5 | 7.1 |
| Number of days national standard exceeded (measured/calculated)[3] | 0/0.0 | 0/0.0 | 2/2.1 |
| **Suspended Particulate Matter ($PM_{10}$)[1]** | | | |
| 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)[3] | 18/18.9 | 10/NA | 19/NA |
| Number of days national standard exceeded (measured/calculated)[3] | 0/0 | 0/NA | 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 ($SO_2$)** | | | |
| Maximum concentration (24-hour) | NA | NA | NA |
| Annual Average | NA | NA | NA |
| Number of days state standard exceeded | NA | NA | NA |

ppm = parts per million by volume, $\mu g/m^3$ = micrograms per cubic meter, NA=Not Available

1 Based on ambient concentrations obtained from the Mohave-923 Poole Street Monitoring Station.

2 Based on ambient concentrations obtained from the Lancaster-43301 Division Street Monitoring Station.

3 Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that a measurement would have exceeded the standard had measurements been collected every day.

SOURCE: CARB 2020.

# Common 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, above.

## Ozone ($O_3$)

Ozone ($O_3$) occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. At ground level, tropospheric, or "bad," ozone is an air pollutant that damages human health, vegetation, and many common materials. Ozone is a key ingredient of urban smog. The troposphere extends to a level approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric, or "good," ozone layer extends upward from approximately 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays (UV-B).

"Bad" ozone is what is known as a photochemical pollutant, which needs the combination of 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 harmful ultraviolet radiation (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 also damages natural ecosystems, such as forests and foothill communities; agricultural crops; and some man made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone also accelerates aging and exacerbates pre-existing asthma and bronchitis. Evidence has linked the onset of asthma to exposure to elevated ozone levels in exercising children (CARB 2016b). Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. In addition, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

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 2016b) and (American Lung Association of California 2007).

## Reactive Organic Gases (ROG)/Volatile Organic Compounds

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).

Most of the studies that evaluate the adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in comment flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness. At extremely high concentration, CO is poisonous and can cause death (USEPA, 2016a).

## Oxides of Nitrogen (NOx)

Oxides of nitrogen ($NO_X$) are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone and react in the atmosphere to form acid rain. $NO_X$ is emitted from solvents and combustion processes in which fuel is burned at high temperatures, principally motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. In terms of $NO_X$ emissions, the two principal species of $NO_X$ are nitric oxide (NO) and nitrogen dioxide ($NO_2$), with the vast majority (95 percent) of the $NO_X$ emissions being comprised of NO. NO is converted to $NO_2$ by several processes, the two most important of these are: (1) the reaction of NO with ozone; and (2) the photochemical reaction of NO with hydrocarbons. A brownish gas, $NO_X$ is a strong oxidizing agent that reacts in the air to form corrosive nitric acid as well as toxic organic nitrates.

### *Health Effects*

$NO_X$ is an ozone precursor that combines with ROG to form ozone. See the ozone section above for a discussion of the health effects of ozone. Direct inhalation of $NO_X$ can cause a wide range of health effects. Health effects of $NO_X$ include irritation of the lungs, lung damage, and lowered resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of $NO_2$ may lead to changes in airway responsiveness and lung function in individuals with pre-existing respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to $NO_2$ may lead

to increased susceptibility to respiratory infection and may cause irreversible lung damage. Other health effects associated with $NO_2$ are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to $NO_2$ may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. Clinical studies of human subjects suggest that $NO_2$ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children. Epidemiological studies have also shown associations between $NO_2$ concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

$NO_X$ 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] 2016a).

## Sulfur Dioxide ($SO_2$)

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide ($SO_2$) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of $SO_2$ to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

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

### *Health Effects*

High concentrations of $SO_2$ can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Health effects from exposure to emissions of $SO_2$ include aggravation of lung diseases, especially bronchitis, and constricting of breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. Short-term exposures of individuals to elevated $SO_2$ levels during moderate activity may result in health effects including breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other health effects that have been associated with longer-term exposures to high concentrations of $SO_2$, in conjunction with high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs’ defenses. $SO_2$ also is a major precursor to particulate matter that is 2.5 microns or less ($PM_{2.5}$), which is a significant health concern and a main contributor to poor visibility (see also the discussion of health effects of particulate matter).

$SO_2$ not only has a bad odor, but can irritate the respiratory system. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. $SO_2$ can also irritate the lung and throat at concentrations greater than 6 ppm in many people; impair the respiratory system's defenses against foreign particles and bacteria when exposed to concentrations less than 6 ppm for longer time periods; and enhance the harmful effects of ozone (combinations of the two gases at concentrations occasionally found in the ambient air appear to increase airway resistance to breathing).

$SO_2$ tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and particulates are also present. Effects are more pronounced among "mouth breathers," e.g., people who are exercising or 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 $SO_2$ and acid aerosols; and
- Subjective symptoms, such as headaches and nausea, in the absence of pathological abnormalities due to long-term exposure.

$SO_2$ can also easily injure many plant species and varieties, both native and cultivated. Some of the most sensitive plants include various commercially valuable pines, legumes, red and black oaks, white ash, alfalfa, and blackberry. The effects include:

- Visible injury to the most sensitive plants at exposures as low as 0.12 ppm for eight hours;
- Visible injury to many other plant types of intermediate sensitivity at exposures of 0.30 ppm for eight hours; and
- Positive benefits from low levels in a very few species growing on sulfur-deficient soils.

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

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

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

Particulate matter (PM) pollution consists of very small liquid and solid particles floating in the air. Some particles are large and dark enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. PM is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. PM also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere.

PM or airborne dusts are the small particles that remain suspended in the air for long periods of time. Particulates of concern are those that are 10 microns or less in diameter ($PM_{10}$) and 2.5 microns or less in

diameter ($PM_{2.5}$). Thus, $PM_{2.5}$ is a subset of $PM_{10}$. $PM_{10}$ and $PM_{2.5}$ are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

The composition of $PM_{10}$ and $PM_{2.5}$ can vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of $PM_{10}$ and $PM_{2.5}$. In addition to those listed previously, secondary particles can also be formed as precipitates from photochemical reactions of gaseous $SO_2$ and $NO_X$ in the atmosphere to create sulfates ($SO_4$) and nitrates ($NO_3$), respectively. Secondary particles are of greatest concern during the winter months when low inversion layers tend to trap the precursors of secondary particulates.

In the western U.S., there are sources of $PM_{10}$ in both urban and rural areas. $PM_{10}$ and $PM_{2.5}$ are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. Because particles originate from a variety of sources, their chemical and physical compositions vary widely.

### *Health Effects*

$PM_{10}$ and $PM_{2.5}$ particles are small enough—about one-seventh the thickness of a human hair or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses and can be trapped in the nose, throat, and upper respiratory tract. Health effects from exposure to $PM_{10}$ and $PM_{2.5}$ begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases; heart and lung disease; and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. $PM_{10}$ and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death. Sensitive populations, including children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis, are especially vulnerable to the effect of $PM_{10}$. Of greatest concern are recent studies that link $PM_{10}$ exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic $PM_{10}$ can also damage man-made materials and is a major cause of reduced visibility in many parts of the United States. Non-health-related effects include reduced visibility and soiling of buildings.

Premature deaths linked to particulate matter are now at levels comparable to deaths from traffic accidents and secondhand smoke. One of the most dangerous pollutants, fine particulate matter (e.g., from diesel exhaust) not only bypasses the body's defense mechanisms and becomes embedded in the deepest recesses of the lung but also can disrupt cellular processes. Population-based studies in hundreds of cities in the United States and around the world have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks. Long-term studies of children's health conducted in California have demonstrated that particulate pollution may significantly reduce lung function growth in children (CARB and American Lung Association of California 2007).

A recent study provides evidence that exposure to particulate air pollution is associated with lung cancer. This study found that residents who live in an area that is severely affected by particulate air pollution are at risk of developing lung cancer at a rate comparable to nonsmokers exposed to secondhand smoke. This study also found approximately 16 percent excess risk of dying from lung cancer due to fine particulate air pollution (Dockery and Pope 2006).

Another study shows that individuals with existing cardiac disease can be in a potentially life-threatening situation when exposed to high levels of fine air pollution. Fine particles can penetrate the lungs and cause the heart to beat irregularly, or can cause inflammation, which could lead to a heart attack (Peters et al. 2001).

Attaining the California particulate matter standards would annually prevent about 6,500 premature deaths, or 3 percent of all deaths. These premature deaths shorten lives by an average of 14 years. This is roughly equivalent to the same number of deaths (4,200 to 7,400) linked to secondhand smoke in the year 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. Adults can suffer from:

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

Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products.

# Other Pollutants

## Hydrogen Sulfide (H2S)

Hydrogen sulfide ($H_2S$) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. $H_2S$ in the atmosphere would likely oxidize into $SO_2$ that can lead to acid rain. At low concentrations $H_2S$, which has a characteristic "rotten egg" smell, may cause irritation to the eyes, mucous membranes and respiratory system, dizziness and headaches. In high concentrations (800 ppm can cause death) hydrogen sulfide is extremely hazardous, especially in enclosed spaces. Occupational Safety and Health Administrations (OSHA) has the primary responsibility for regulating workplace exposure to $H_2S$.

### *Health Effects*

Exposure to low concentrations of $H_2S$ may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Exposure to higher concentrations (above 100 ppm) can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of $H_2S$ (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in many individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of $H_2S$ (0.00011–0.00033 ppm). Deaths due to breathing in large amounts of $H_2S$ have been reported in a variety of different work settings, including sewers, animal processing plants, waste dumps, sludge plants, oil and gas well drilling sites, and tanks and cesspools.

## Vinyl Chloride

Vinyl chloride monomer is a sweet-smelling, colorless gas at ambient temperature. Landfills, publicly owned treatment works, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. PVC can be fabricated into several products, such as PVC pipes, pipe fittings, and plastics.

### *Health Effects*

In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of liver angiosarcoma, which is a rare cancer, and have suggested a relationship between exposure cancers of the lung and brain. There are currently no adopted ambient air standards for vinyl chloride.

Short-term exposure to vinyl chloride has been linked with acute health effects: (USEPA, 2016e).

- Acute exposure of humans to extremely high levels of vinyl chloride via inhalation 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 (USEPA 2000). Several reproductive/ developmental health effects from vinyl chloride exposure

have been identified including incidence of birth defects, miscarriages, and increased cancer risk (USEPA 2000).

- Tests involving acute exposure of mice to vinyl chloride have shown high acute toxicity from inhalation exposure to the substance.

Long-term exposure to vinyl chloride concentrations has been linked with the following chronic health effects (USEPA, 2016e):

- Liver damage may result in humans from chronic exposure to vinyl chloride, through both inhalation and oral exposure.
- A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air have developed a set of symptoms termed "vinyl chloride disease," which is characterized by Raynaud's phenomenon (fingers blanch and numbness and discomfort are experienced upon exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).
- Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual and/or hearing disturbances, memory loss, and sleep disturbances) as well as peripheral nervous system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers) have also been reported in workers exposed to vinyl chloride.

Several reproductive/developmental health effects from vinyl chloride exposure have been identified USEPA, 2016e):

- 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 are a measure of visibility. CARB does not yet have a measurement method that is accurate or precise enough to designate areas in the state as being in attainment or nonattainment. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. Except for Lake County (which is designated to be in attainment), California's attainment status with respect to visibility-reducing particles is currently designated as unclassified.

# Toxic Air Contaminants (TACs)

Toxic air contaminants (TACs), as known under the California Clean Air Act of 1988 (CCAA), includes a variety of pollutants generated or emitted by industrial production activities., Under CCAA, 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 proposed 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.

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.

## *Health Effects*

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).

Diesel engines are a major source of fine-particle pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can reduce lung function in children. In California, diesel exhaust particles have been identified as carcinogens (OEHHA and ALAC, 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.

## *Health Effects*

Approximately 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms include fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps may develop on the skin. One important fact to mention is that these symptoms are not unique to Valley Fever and may be caused by other illnesses as well. Identifying and confirming this disease require specific laboratory tests such as: (1) microscopic identification of the fungal spherules in infected tissue, sputum or body fluid sample; (2) growing a culture of *CI* from a tissue specimen, sputum, or body fluid; (3) detection of antibodies (serological tests specifically for Valley Fever) against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin Test (called coccidioidin or spherulin), which indicate prior exposure to the fungus (Valley Fever Center for Excellence 2019a). 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 2019a).

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

**TABLE 4.3-3: RANGE OF COMPLICATIONS OF VALLEY FEVER CASES**

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

SOURCE: Valley Fever Center for Excellence 2019b.

## Asbestos

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. In addition, naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. According to information provided by the 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 (USGS, 2011b).

### *Health Effects*

Asbestos can only adversely affect humans in its fibrous form and these fibers must be broken and dispersed into the air and then inhaled. During geological processes, the asbestos mineral can be crushed, causing it to become airborne. It also enters the air or water from the breakdown of natural deposits. Constant exposure to asbestos at high levels on a regular basis may cause cancer in humans. The two most common forms of cancer are lung cancer and mesothelioma, a rear cancer of the lining that covers the lungs and stomach.

# 4.3.3 Regulatory Setting

In California, air quality is regulated by several agencies, including USEPA, CARB, and local air districts, such as EKAPCD. Each of these agencies develops rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although USEPA regulations may not be superseded, some state and local regulations may be more stringent than federal regulations. The project site is located within the MDAB, which is under the jurisdiction of EKAPCD.

## Federal

### U.S. Environmental Protection Agency

The principal air quality regulatory mechanism on the federal level is the Clean Air Act (CAA) and in particular, the 1990 amendments to the CAA, and the NAAQS that it establishes. These standards identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants include ozone, CO, $NO_2$ (which is a form of $NO_X$), $SO_2$ (which is a form of $SO_X$), $PM_{10}$, $PM_{2.5}$, and lead (Pb). 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, 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 $NO_2$ and $SO_2$ can in some instances be more stringent than the respective CAAQS.

CARB is also responsible for regulations pertaining to TACs. The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities

routinely release into their local air basin. Each air pollution control district (ACPD) and air quality management district (AQMD) in the state ranks the data into high, intermediate and low priority categories. When considering the ranking, the potency, toxicity, quantity, volume and proximity of the facility to receptors are given consideration by an air district.

CARB also has on- and off-road engine emission-reduction programs that would indirectly affect the proposed 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 proposed project.

In 2007, CARB enacted a regulation for the reduction of diesel particulate matter (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 permits 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 NOx and ROB must process a Title V permit. In "extreme Designation" areas, the definition of a major source which requires Title V permitting, changes from 25 tpy to 10 tpy. This change results in more businesses having to comply with Title V permitting requirements under the Extreme nonattainment designation.

Title V does not impose any new air pollution standards, require installation of any new controls on the affected facilities, or require reductions in emissions. Title V does enhance public and USEPA participation in the permitting process and requires additional record keeping and reporting by businesses, which results in significant administrative requirements.

## California Renewables Portfolio Standard

Established in 2002 under Senate Bill (SB) 1078 and accelerated by SB 107 [2006] and SB 2 [2011], California's Renewable Portfolio Standard (RPS) requires investor-owned utilities, energy service providers, and community choice aggregators to purchase 33 percent of their electricity from renewable energy sources by 2020. In 2015, the Clean Energy Pollution Act of 2015 (SB 350) further increased the RPS goal from 33 percent 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, Senate Bill 100 [2017] proposes to require a 50 percent renewable resource target by December 31, 2026, and a 60 percent target by December 31, 2030.

# Local

## Kern County General Plan

The goals, policies, and implementation measures in the Kern County General Plan (KCGP) applicable to air quality, as related to the proposed project, are provided below. The KCGP contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the proposed project. Therefore, they are not listed below.

### *Chapter 1. Land Use, 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 $PM_{10}$ and $PM_{2.5}$ emissions.

Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.

***Implementation Measures***

Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.

Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:

a. Minimizing idling time.

b. Electrical overnight plug-ins.

Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:

a. Pave dirt roads within the development.

b. Pave outside storage areas.

c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.

d. Use of alternative fuel fleet vehicles or hybrid vehicles.

e. Use of emission control devices on diesel equipment.

f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.

g. Provide bicycle lockers and shower facilities on site.

h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).

i. The use and development of park and ride facilities in outlying areas.

j. Other strategies that may be recommended by the local Air Pollution Control Districts.

Measure J: The County should include $PM_{10}$ control measures as conditions of approval for subdivision maps, site plans, and grading permits.

### *Chapter 5. Energy Element*

#### 5.4.5 Solar Energy Development

***Goal***

Encourage safe and orderly commercial solar development.

***Policies***

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil 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.

## 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 the following as applicable:

- Development of a Site Specific Dust Control Plan that considers ongoing community stakeholder input, to the extent feasible and practicable.
- Use of Global Positioning System (GPS) or lasers to level posts, generally avoiding grading except when elevation changes exceed design requirements.
- When grading is unavoidable, it is to be phased and done with the application of approved chemical dust palliatives (chemical substances applied to a road surface to reduce airborne dust) that stabilize the earth.
- Use of dust suppression measures during road surface preparation activities, including grading and compaction.
- Final road surfaces must be stabilized to achieve a measurable threshold friction velocity (TFV – the wind speed at which erosion starts) equal to or greater than 100 centimeters per second.
- If ground is cleared, plant roots must be left in place where possible.
- Expanded 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 proposed project does not involve traditional stationary sources, on March 12, 2015 the EKAPCD adopted rules requiring commercial solar facilities to obtain Authority to Construct and Permit to Operate approval under Rule 201 to address fugitive dust emissions. Under Rule 201, these projects would be required to submit a Fugitive Dust Emissions Control Plan in accordance with Rule 402. In addition, the EKAPCD is requiring a Fugitive Dust Emissions Monitoring Plan through which each facility will 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
- Sulfur oxides (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 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 ($\mu g/m^3$) above upwind concentrations as determined by utilizing high-volume particulate matter samplers, or other USEPA-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.

As required by the federal CAA and CCAA, air basins or portions thereof have been classified as either "attainment" or "nonattainment" for each criteria air pollutant based on whether or not the standards have been achieved. Jurisdictions of nonattainment areas are also required to prepare an air quality management plan (AQMP) that includes strategies for achieving attainment. On January 9, 2003, EKAPCD adopted the East Kern Ozone Attainment Demonstration, Maintenance Plan and Redesignation Request for the East Kern County nonattainment area. On May 1, 2003, the EKAPCD Board adopted amendments to the January 2003 plan and on December 9, 2003, CARB adopted and submitted the amended plan to USEPA. As an ozone nonattainment area, EKAPCD is required to adopt retrofit Reasonably Available Control Technology rules for all sources of ozone precursor emissions. EKAPCD has fulfilled this mandate by adopting a number of rules between 1987 and 2005, which aimed to reduce ozone precursor emissions.

### *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 2017a). 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 (SJVAB) and the Mojave Desert Air Basin (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 $PM_{10}$ (Kern COG, 2017).

# 4.3.4 Impacts and Mitigation Measures

This section describes the impact analysis relating to air quality for the proposed project. It describes the methods used to determine the impacts of the proposed 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 proposed project's potential impacts to air quality have been evaluated using a variety of resources, including the Air Quality Impact Analysis located in Appendix C of this EIR/EA. The Air Quality Impact Analysis was prepared in accordance with EKAPCD's *Guidelines for Implementation of the California Environmental Quality Act* (EKAPCD 1999) and Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*. 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 proposed project. Using the aforementioned resources and professional judgment, impacts were analyzed according to the significance criteria in Appendix G, Air Quality, in the 2018 CEQA *Guidelines*, detailed in the Thresholds of Significance section below. Additional details regarding the methodology used for evaluating construction and demolition air quality impacts, operational air quality impacts, and emissions reductions is provided below.

### Short-term Construction and Decommissioning

Short-term emissions are primarily generated from the construction phase of a project and are recognized to be short in duration and without lasting impacts on air quality. The California Emissions Estimators Model (CalEEMod) version 2016.3.1 (CAPCOA 2016b) was used to estimate emissions from construction worker vehicles and onsite construction equipment. Emissions modeling was based on anticipated construction schedules and construction equipment requirements provided by the project applicant, information derived from similar projects, and default parameters contained in the model for the portion of Kern County located within the MDAB. Project construction would generate pollutants from equipment and vehicle exhaust, and fugitive dust from the following activities: move-on, site preparation and grading, internal roads, solar array, collector lines and battery storage, water pumping, and haul trucks and worker trips. Construction emissions were calculated based on the assumption of a six-month construction duration.

On-road vehicle use assumed a one-way trip distance of 51 miles for workers and delivery trips. The trip distance was quantified based on the average distances to nearby communities assuming that 40 percent of the worker trips would come from the Palmdale/Lancaster area, 20 percent from the Santa Clarita/northern LA area, 20 percent from the Bakersfield metropolitan area, and 20 percent from the nearby communities of Mojave, Tehachapi, and Rosamond. Haul truck trips for the transport of equipment and solar structural and module components were quantified assuming an in-Basin travel distance of 51 miles/trip, based on the assumption that all materials would be imported through a western seaport (e.g., Port of Long Beach).

Emissions associated with the pumping/conveyance of water for use during construction assumed a total demand of 1.48 million gallons. Emissions of $NO_X$ and $SO_X$ were based on emission factors derived from the USEPA's Emissions & Generation Resource Integrated Database (eGRID), 9th Edition (February 2014) for the WECC California (CAMX) sub-region. $PM_{10}$ derived from 2008 Building Energy Efficiency

Standards for Residential and Nonresidential Buildings, revised June 2009; $PM_{2.5}$ assumes 67 percent of $PM_{10}$ per USEPA AP42. ROG and CO emission factors were assumed based on rates identified in the South Coast Air Quality Management District's (SCAQMD's) CEQA Air Quality Handbook, Table A9-11-A (1993) and ARB Guidance for Permitting of Electric Generating Technologies (2002).

Mitigated construction-generated fugitive dust emissions were quantified assuming an onsite speed limit of 15 miles per hour (mph), a control efficiency of 61 percent for watering of disturbed surfaces, and a 55 percent control efficiency for watering of unpaved roadways. Watering control efficiencies were based on a minimum application rate of three times daily, sufficient to keep soils and roadway base materials moist. Given that construction activities would be short-term occurring over an approximate 6-month period and the lack of sensitive land uses in the project area, short-term exposure to odors and localized pollutant concentrations were qualitatively assessed. Emissions modeling assumptions and output files are included in Appendix C of this EIR/EA (Ambient 2017).

Additionally, while the estimated $PM_{10}$ emissions accounts for dust generation during construction activities, they do not directly address wind erosion issues associated with unworked barren soil after the removal of vegetation. The actual amount of wind erosion possible is highly dependent on the season of initial construction, the length of time until the solar modules are installed, the amount of disturbance to the barren surface, and the effectiveness of the type of dust suppressant used (if any is used). Eventually, the placement of the solar modules themselves will tend to reduce wind erosion at the site because the solar panels shelter the soil and limit the extent to which wind can move surface particles.

Visibility at offsite locations may also be impacted by emissions of airborne PM from short-term construction activities. Federally designated Class I areas are of particular concern. These include many wilderness areas and national parks. In addition, military aircraft use areas within the Upper Mojave Desert region, such as Edwards Air Force Base, Fort Irwin, China Lake Naval Weapons Station and the R-2508 Airspace Complex are also sensitive to reduced visibility from airborne PM.

Visibility impact analyses are intended for stationary sources of emissions which are subject to the PSD requirements in 40 CFR Part 60; they are not usually conducted for area sources. 40 CFR Section 52.21 (b)(23)(i) establishes the Significant Emission Rate for $PM_{10}$ at 15 tons/year. Because the proposed project's $PM_{10}$ emissions increase are predicted to be less than the PSD threshold levels, an impact at any Class 1 area within 100 kilometers of the proposed project (including Edwards Air Force Base, China Lake Naval Weapons Station and the entire R-2508 Airspace Complex, and Death Valley National Monument) is extremely unlikely.

Short-term construction may result in increased emissions of fugitive dust that, if uncontrolled, could potentially affect visibility in the project vicinity. EKAPCD has adopted various rules and regulations for the control of fugitive dust and visibility-reducing emissions. Long-term project operations would not include activities or emission sources that would contribute to decreased visibility. Therefore, adherence to EKAPCD rules and regulations would result in less-than-significant impacts regarding fugitive dust and reduced visibility.

The proposed project has a tentative life of approximately 35 years, at which time the operations can be renewed and onsite technology updated, or the proposed project could be decommissioned. As decommissioning activities would be similar to construction activities (using the same types of equipment and same general activities), the quantified emissions from construction are used as a surrogate for decommissioning activities. However, it is anticipated that the 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.

## Long-term Operational Emissions

Long-term emissions are caused by operational mobile sources from periodic maintenance and cleaning of the solar panels. The proposed project analyzed three categories of mobile sources generating long-term emissions: water trucks, maintenance trucks and employee vehicles. These activities would be a source of ROG, $NO_X$, $SO_X$, CO, $PM_{10}$ and $PM_{2.5}$ exhaust and fugitive $PM_{10}$ emissions.

Emissions modeling assumed an average of two worker trips per day for routine maintenance and operations, which would utilize existing staff from the existing operations and maintenance facility located adjacent to the Manzana substation. An average trip distance of 2.5 miles was assumed for worker trips. Panel washing was assumed to occur annually over a total of nine days. In total, panel washing activities are estimated to require an additional six workers and two trucks daily for the transport of water. A 5-mile trip length for worker trips and a 15-mile trip length for haul trucks was assumed, based on information provided by the project proponent. Panel washing was assumed to require the use of two pressure washers operating eight hours/day, up to nine days/year.

Long-term increases of odors and toxic air contaminants attributable to the project were qualitatively assessed. In addition, given that decommissioning of the proposed project would entail many of the same construction-related activities with similar levels of equipment use, emissions associated with project decommissioning were assumed to be similar to those generated during project construction.

## Displaced Grid Electricity Emissions

It is important to note that operation of the proposed project would reduce or “offset” electricity on the statewide electrical transmission and distribution system (more commonly referred to as the grid), which includes energy generated by traditional sources, such as natural gas and coal-fired plants. These emissions are often referred to as “displaced” or “avoided” emissions. Calculating displaced emissions can be complicated and is dependent on multiple factors, such as seasonal changes, weather conditions, fuel demands and availability, and changes in the state-wide energy resource mix. These factors often fluctuate, sometimes daily, which complicates the estimation of displaced emissions. For instance, during drought years, less hydroelectricity is available and other power sources are used to supplement the lack of available hydroelectricity. These other sources can be in-state or out-of-state plants, including those powered by fossil fuels (e.g., natural gas, coal).

Because electricity enters the state-wide grid from multiple sources and locations, it is typically not possible or recommended to calculate displaced emissions for a specific facility or in-state geographic area. As a result, displaced emissions were conservatively estimated based on the state-wide electricity power system resource mix, which includes plants powered by fossil fuels, as well as renewable resources (biomass, geothermal, hydro, solar, wind, etc.). Displaced emissions specific to fossil-fuel plants would likely be higher.

Estimated annual emissions likely displaced by the proposed project are provided in the air quality technical report. This information is included to provide a more accurate interpretation of the overall impacts associated with the proposed project. As depicted, displaced emissions would total approximately 0.4

tons/year of ROG, 15.2 tons/year of $NO_X$, 7.5 tons/year of CO, 6.4 tons/year of $SO_X$ 3.4 tons/year of $PM_{10}$, and 2.3 tons/year of $PM_{2.5}$. Actual emissions displaced by the proposed project would vary for the reasons discussed above. Nonetheless, implementation of the proposed project would be anticipated to result in an overall net reduction in statewide emissions of criteria air pollutants. Regardless, the determination of significance above does not depend on calculation of offsets, and even without these offsets, project-generated emissions would not exceed applicable thresholds.

### *Decommissioning Emissions*

Decommissioning of the proposed project would entail many of the same construction-related activities with similar levels of equipment use. Therefore, emissions associated with project decommissioning were assumed to be similar to those generated during project construction.

### *Toxic Air Contaminant (TAC) Emissions*

During construction and operation of the proposed project, the use of diesel-powered equipment at the project site would generate emissions of diesel particulate matter (DPM), which is a TAC. Exposure to DPM emissions can cause health risk impacts when sensitive receptors are located near the project site. However, there are no sensitive receptors located near the project site. The closest sensitive receptor is a residence that is 1.2 miles away. At this distance, exposure to project-related DPM emissions would be negligible and there would be no health risk impacts due to exposure to DPM. Therefore, a health risk assessment (HRA), which focuses on long-term health risk impacts (cancer and chronic non-cancer risks), was not determined necessary for this project.

## 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 2019 CEQA *Guidelines*, to determine if a project could potentially have a significant adverse effect to air quality.

A project would have a significant impact 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 (in a specific location) exceed any of the following adopted thresholds:

   i. <u>San Joaquin Valley Unified Air Pollution Control District</u>

      a) Operational and Area Sources*:*

         - 10 tons per year for Reactive Organic Gases (ROG)
         - 10 tons per year for Oxides of Nitrogen (NOx)
         - 15 tons per year for Particulate Matter ($PM_{10}$)

      b) Stationary Sources – as determined by District Rules:

         - Severe Nonattainment: 25 tons per year
         - Extreme Nonattainment:10 tons per year

ii. 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 $PM_{10}$

b) Stationary Sources - Determined by District Rules:

- Severe nonattainment: 25 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.

As lead agency, Kern County determined in the Notice of Preparation/Initial Study (NOP/IS), located in Appendix A of this EIR/EA, that the proposed project would not result in significant impacts to some of these environmental issue areas; these issue areas are thus scoped out of this EIR/EA. It was determined that the proposed project would not:

b. (i.) 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. (including releasing emissions which exceed quantitative thresholds for ozone precursors)? Specifically, would implementation of the project exceed any of the following adopted thresholds:

i. San Joaquin Valley Unified Air Pollution Control District

a) Operational and Area Sources*:*

- 10 tons per year for Reactive Organic Gases (ROG)
- 10 tons per year for Oxides of Nitrogen (NOx)
- 15 tons per year for Particulate Matter ($PM_{10}$)

b) Stationary Sources – as determined by District Rules:

- Severe Nonattainment: 25 tons per year
- Extreme nonattainment: 10 tons per year

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

The proposed project is not located within the San Joaquin Valley Air Pollution Control District (SJVAPCD). Therefore, impacts are not anticipated, and further discussion is not warranted in this section. The proposed project would not create objectionable odors that would adversely affect a substantial number of people in the project vicinity. Land uses typically producing objectionable odors include wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project would not have any stationary sources or equipment located on site 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 be temporary and would be dispersed rapidly. Therefore, there would be no impact and this topic is not evaluated further in this section.

# 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 proposed project implements all reasonably available and feasible air quality control measures. The consistency with the Air Quality Management Plan (AQMP) is discussed below for construction and operation.

Air quality impacts are controlled through policies and provisions of the EKAPCD, the Kern County General Plan, and the Kern County Code of Building Regulations. The CCAA requires APCDs and AQMDs 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 USEPA for final review and approval within the SIP.

## *Required Evaluation Guidelines*

CEQA *Guidelines* and the CAA (Sections 176 and 316) contain specific references regarding the need to evaluate consistencies between the proposed 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 USEPA. Additionally, EKCAPCD has implemented the current, modified AQAP as approved by CARB and is under review by USEPA.
2. *The project must be consistent with the growth assumptions of the applicable AQMP*. The project, as a 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 proposed 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 review of Traffic Analysis Zones (TAZ) data show that sufficient population and household increases are planned for the project area;
- That, by definition, the estimated emissions from the project are below EKAPCD's established emissions impact thresholds; and
- That the primary source of emissions from the project would be motor vehicles, which would be licensed through the State of California, whose emissions are already incorporated into CARB's Eastern Kern County's Emissions Inventory.

### *Construction*

During the temporary construction period, the proposed project would be considered to have a potentially significant impact based on unmitigated $PM_{10}$ emissions exceeding the $PM_{10}$ significance threshold established in the EKAPCD guidelines for implementing CEQA and as adopted by the Kern County Board of Supervisors (Ambient 2017); therefore, the proposed project would result in emissions that would obstruct the air quality planning goals set forth by EKAPCD and the impact would be potentially significant.

While this impact has the potential to be significant, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 would ensure that all readily available and feasible air quality control measures that are in conformance with applicable air quality plans would be implemented. Mitigation Measures MM 4.3-1 and MM 4.3-2, which would reduce construction fugitive dust and equipment emissions, would be implemented in conformance with the applicable EKACPD plans and regulations and Kern County General Plan Policies 20 and 21. While the implementation of these mitigation measures would reduce emissions of $PM_{10}$ during construction of the project, these emissions would not be reduced below the EKACPD significance threshold.

As the MDAB is in non-attainment for $PM_{10}$ and the project would result in significant temporary levels of $PM_{10}$ 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 impact.

### *Operation*

In general, a project would not interfere with the applicable air quality plan if it is consistent with growth assumptions used to form the applicable air quality plan. As described in Section 4.10, *Land Use and Planning*, of this EIR/EA, the proposed project's zoning classifications are consistent with current Kern County Zoning Ordinance land use designations, which allow solar development by conditional use permit on the portions of the project site proposed for development. Concerning the portion of the site administered by the BLM, the proposed project is also consistent with the Desert Renewable Energy Conservation Plan (DRECP) Development Focus Area classification. See Chapter 11, *Environmental Assessment*, for details.

The only source of long-term operational emissions associated with the proposed project would be those generated from mobile sources traveling to and from the project area from operations and maintenance employees, which would be minimal and would not result in a substantial increase in emissions. It should be noted that the proposed project does not propose to have any new employees during operations and would rely on the existing employees that work at the Manzana Wind Facility. As shown below in **Table 4.3-5**, *Cumulative Operational Emissions Near Project*, under Impact 4.3-3, the project's long-term operational emissions would be below EKAPCD's applicable significance thresholds.

Furthermore, the solar power generation system of the proposed project has the potential to reduce 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 solar facility could further aid in reducing air pollutant emissions and increase the potential for attainment of the Ozone AQAP/SIP. Therefore, the project would not conflict with the EKAPCD's Ozone AQAP. As project operational emissions would also not exceed the EKAPCD thresholds, implementation of the proposed project would not obstruct implementation of an air quality plan during operation and operational impacts would be less than significant.

### *Decommissioning*

The proposed project is anticipated to operate for approximately 35 years, after which time it would either be updated to then-current solar power technologies or would be converted to other uses in accordance with applicable land use regulations in effect at that time if its CUP is not extended. The proposed 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 proposed 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 proposed project. Mitigation measures related to the decommissioning of utility sized solar facilities are included as a requirement of all proposed solar projects in Kern County, not just this proposed project, in order to establish safeguards to ensure the maintenance of the health, safety, and welfare of the citizens of the County.

Emissions generated during decommissioning would be anticipated to be less than those estimated for construction activities as future year equipment would be required to fully comply with emissions standards for heavy-duty construction equipment that are expected to be more stringent than current standards. As discussed in Impact 4.3-3 below, construction emissions may exceed the EKAPCD thresholds adopted by Kern County. Similarly, although decommissioning emissions are expected be less than construction-related emissions, emissions associated with decommissioning may also exceed the applicable EKAPCD thresholds adopted by Kern County. Therefore, decommissioning has the potential to result in significant impacts. Mitigation Measures MM 4.3-1 and MM 4.3-2 would be implemented to reduce emissions.

### *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 and the Bureau of Land Management (BLM):

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.

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 and the Bureau of Land Management (BLM). 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) 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 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*

As shown in **Table 4.3-4**, *Cumulative Construction Emissions Near Project*, below, the proposed project annual construction emissions of $PM_{10}$ with mitigation would exceed the EKAPCD $PM_{10}$ threshold. Therefore, impacts from $PM_{10}$ emissions would be temporarily significant and unavoidable during construction, even with implementation of mitigation. Impacts from all other emissions (ROG, NOx, and SOx from construction, and ROG, NOx, SOx, and $PM_{10}$ from operational and decommissioning emissions) 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. Although there are no sensitive land uses located within 1.2 mile of the project site, the proposed project is analyzed for the potential to expose any sensitive receptors to TACs, diesel particulate matter, criteria pollutants, CO Hot Spots, Valley Fever, visibility impacts, asbestos, and health effects of criteria pollutants.

### *Toxic Air Contaminants*

The primary TAC of concern for this project would be DPM emitted during construction and maintenance activities. The proposed project would not be anticipated to generate any additional sources of TACs.

### *Diesel Particulate Matter*

Heavy-duty vehicle operations and construction equipment during the grading and building phases at the project site would produce DPM, which was identified by the CARB as a TAC in 1998. DPM is a subset of $PM_{10}$ exhaust emissions and is detailed in the emissions analysis above. The use of diesel powered construction equipment, however, would be temporary and episodic and would occur over a relatively large area. Construction activities would occur over an approximately six-month period, which would constitute approximately 0.02 percent or less of the typical exposure period used for health risk assessment. For this reason and given the relatively high dispersive properties of DPM, exposure to construction-generated DPM would not be anticipated to exceed applicable thresholds (i.e., incremental increase in cancer risk of 10 in one million). In addition, it is important to note that no sensitive land uses are located within approximately 1.2 miles of the project site. For these reasons, this impact would be considered less than significant.

### *Criteria Air Pollutants*

Aside from DPM, heavy-duty vehicle operations and construction equipment during the grading and building phases of construction can produce substantial amounts of criteria air pollutants, primarily pre-cursor ozone pollutants (ROG and $NO_X$), CO, $NO_2$, and particulate matter. Since none of these criteria air pollutants, with the exception of $PM_{10}$, would be emitted in sufficient quantity to potentially exceed both the NAAQS and CAAQS, and the emissions are considered minimal, an ambient air quality analysis was not performed.

As previously noted, onsite PM emissions would be primarily associated with ground-disturbing activities, including site preparation, grading and road construction activities. The highest concentrations of PM associated with construction-related ground-disturbing activities that have a potential to exceed ambient air quality standards typically occur within a few hundred feet of a construction site. As noted above, no sensitive land uses are located in the vicinity of the project site. The nearest sensitive land use is a rural residential dwelling located 1.2 miles from the project site. Furthermore, it is important to note that this ambient air quality standard is based on a 24-hour and annual average. Given that construction activities would be limited to daytime hours over an approximately six-month period, the lack of sensitive land uses in the area, and given that airborne PM emissions would dissipate rapidly with increased distance from the source, this impact would be considered less than significant.

Therefore, the proposed project would not expose nearby sensitive receptors to a substantial increase in long-term localized pollutant concentrations and the possible chronic impact on human health would be less than significant.

### *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, and hospitals are located in the vicinity of the affected intersection or signalization.

Nearby signalized intersections primarily affected by short-term construction activities are not expected to operate at unacceptable levels of service. Based on traffic analyses prepared for similar projects in the area, short-term construction activities would not be anticipated to result in a degradation of LOS at nearby signalized intersections to unacceptable LOS (Ambient 2018). In addition, the long-term operation of the project would result in only minimal increases in vehicle traffic and would not result in a substantial contribution to the LOS of nearby roadway intersections. For these reasons, the proposed project would not be anticipated to result in a substantial increase in localized CO concentrations having the potential to exceed applicable ambient air quality standards. Localized concentrations of CO are, therefore, considered to be less than significant.

### *Valley Fever*

The project has the potential to generate substantial amounts of fugitive dust and suspend Valley Fever spores with the dust that could then reach nearby sensitive receptors. The Kern County Public Health Services Department found that *Coccidioides ssp.* frequently occurs in the soil in the following areas (KCPHSD 2017):

- Sites with many animal burrows,
- (prehistoric) Native American campsites,
- Areas with sparse vegetation,
- Areas adjacent to arroyos,
- Packrat middens,
- Upper 12 inches of undisturbed soil, and
- Sandy well aerated soil with high water holding capacity.

As compared to these conditions, the aridity of the site would limit small mammal populations to some extent. The site contains sparse vegetation, the soil is sandy and well aerated, and the site could be home to packrats. Nonetheless, given the fact that they live in an area where the fungus can exist, nearby residents have likely already been exposed to this fungus during their current residency. Therefore, construction would not be anticipated to result in an increased exposure to the spores.

Nonetheless, during project construction, it is possible that onsite workers could be exposed to Valley Fever as fugitive dust is generated during construction. However, dust minimizing techniques would be employed, such as maintaining natural vegetation where possible, utilizing "mow-and-roll" vegetation clearance strategy, placement of wind control fencing, application of water, and application of dust suppressants would substantially reduce potential exposure to the fungus within the soil as compared to full grading/blading of the site. Additionally, implementation of dust control measures throughout the construction period compliant to EKAPCD rules and regulations to reduce fugitive dust emissions would also limit the exposure of both onsite workers and offsite residents. Implementation of Mitigation Measure MM 4.3-3 would further reduce the potential for worker exposure by requiring personal protection equipment, training and other best practices. In addition, MM 4.3-4 requires the Project Proponent to pay a

one-time fee to the Kern County Public Health Services Department for Valley Fever public awareness programs. Therefore, impacts would be less than significant with mitigation.

### *Visibility Impacts*

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. 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.

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. As described above, according to information provided by the Department of Conservation, Division of Mines and Geology, the project site is not located in an area where naturally occurring asbestos is likely to be present. 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 (one hour), PM 10 and PM2.5 and a nonattainment area for O3 (eight hour) under the NAAQS, and nonattainment for O3, PM 10 and PM2. 5 under the CAAQS.

Regarding health effects of criteria air pollutants, implementation of MM 4.3-1 and MM 4.3-2 would reduce the project's potential to result in regional health effects associated with ROG, NOX, PM10 and PM2.5; however, localized health effects associated with NOX, PM10, and PM2.5 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 SJVAPCD and the South Coast Air Quality Management District 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 NOx 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 NOx 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 PM2.5, 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).

## Mitigation Measures

### *Toxic Air Contaminants*

None required.

### *Localized Pollutant Concentrations*

None 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:

1. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations.
2. 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.
3. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
4. 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.
5. All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system.
6. 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 and BLM within 5 days of the training session.

7. 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.
8. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health–approved respirators shall be provided to onsite personal, upon request. Evidence of training shall be provided to the Kern County Planning and the Bureau of Land Management (BLM).

**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.

### *Asbestos*

None required.

## Level of Significance after Mitigation

Sensitive receptor exposure to TACs, CO and asbestos would result in less than significant impacts. With implementation of Mitigation Measure MM 4.3-3 and MM 4.3-4, sensitive receptor exposure to Valley Fever would result in less than significant impacts.

# Cumulative Setting, Impacts, and Mitigation Measures

In accordance with Kern County's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*, the geographic scope for cumulative air quality impacts includes related projects within a 6-mile radius of the project site. Kern County's Guidelines require three steps for estimating the potential significance of cumulative impacts: (1) evaluate localized impacts; (2) evaluate consistency with existing air quality plans; and (3) summarize CARB air basin emissions (i.e., for this proposed project, the Mojave Desert Air Basin).

**Impact 4.3-3: The construction and operation of the project would result in a cumulatively considerable net increase of any criteria pollutant for which the projects' region is nonattainment under applicable federal or state ambient air quality standards.**

### *Localized Impacts*

Currently, there are no projects are located within a 1-mile radius of the project site; however, there are 20 related projects within a 6-mile radius of the project site. Cumulative emissions were evaluated in conjunction with these projects. This geographic scope of analysis is appropriate for determining air quality impacts because of the statewide, regional, and localized nature of air quality impacts, which could occur

cumulatively with the proposed project. **Tables 4.3-4**, *Cumulative Construction Emissions Near Project*, and **4.3-5**, *Cumulative Operational Emissions Near Project*, show the maximum construction and annual operational emissions, respectively, which would result from cumulative projects within 6 miles of the proposed project (see Appendix C of this EIR/EA).

For some of the related projects located within the 6-mile radius, emissions information was not available at the time this report was prepared. Where emissions for related projects were known, emissions were conservatively assumed to occur concurrent with project construction and operation, respectively.

**TABLE 4.3-4: CUMULATIVE CONSTRUCTION EMISSIONS NEAR PROJECT**

| | Emissions For One Construction Year (tons) | | | | | |
|---|---|---|---|---|---|---|
| | **ROG** | **$NO_X$** | **CO** | **$SO_X$** | **$PM_{10}$** | **$PM_{2.5}$** |
| Project Construction Emissions | 1.3 | 10.9 | 8.2 | 0.0 | 23.2 | 2.8 |
| EKAPCD Threshold (tons per year) | 25 | 25 | -- | 27 | 15 | -- |
| Is Threshold Exceeded? | No | No | NA | No | ***Yes*** | NA |
| Total Emissions within 6 miles | 19.5 | 115.5 | 110.1 | 10.4 | 145.5 | 19.8 |
| **Cumulative Plus Project** | 20.8 | 126.4 | 118.3 | 10.4 | 168.7 | 22.6 |
| EKAPCD Threshold (tons per year) | 25 | 25 | -- | 27 | 15 | -- |
| Is Threshold Exceeded? | No | ***Yes*** | NA | No | ***Yes*** | NA |

SOURCE: Ambient 2017.

As shown in Table 4.3-4, substantial construction emissions could result if all cumulative solar projects are built concurrently. However, the number of these projects that would undergo concurrent construction, if any, is unknown. Kern County has determined that the EKAPCD's project-level thresholds are defined, for purposes of determining cumulative effects, as the baseline for "considerable." As noted in Table 4.3-4, the project annual construction emissions of $PM_{10}$ with mitigation would exceed the EKAPCD $PM_{10}$ threshold and, therefore, the proposed project would result in emissions that are "considerable" with respect to cumulative construction impacts. Other projects within 6 miles would also have $NO_X$ and $PM_{10}$ emissions that are "considerable" with respect to cumulative construction impacts. Therefore, cumulative impacts would be significant with respect to localized construction emissions and would interfere with attainment of applicable air quality standards during construction activities.

Additionally, while the estimated $PM_{10}$ emissions shown in Table 4.3-4 accounts for dust generation during construction activities, they do not directly address wind erosion issues associated with unworked barren soil after the removal of vegetation. The actual amount of wind erosion possible is highly dependent on the season of initial construction, the length of time until the solar modules are installed, the amount of disturbance to the barren surface, and the effectiveness of the type of dust suppressant used (if any is used). Eventually, the placement of the solar modules themselves would tend to reduce wind erosion at the proposed project site because the solar panels shelter the soil and limit the extent to which wind can move surface particles. Furthermore, the proposed project would be required to comply with applicable fugitive dust control measures and best management practices pursuant to EKAPCD Rule 402 (Fugitive Dust), which would minimize the generation of fugitive dust. Control measures and best management practices in EKAPCD Rule 402 include the application of water or dust suppressants, use of wind breaks such as fencing, barriers, or berms, enclosures or covers for storage piles, minimizing vehicle speeds, and

maintaining at least six inches of freeboard or covering loads in haul trucks. Implementation of control measures and best management practices consistent with EKAPCD Rule 402 requirements would assist in reducing project-related fugitive dust emissions.

### Construction Localized Health Impacts from Regional Emissions (Friant Ranch Case)

The accumulation and dispersion of air pollutant emissions within an air basin is dependent upon the size and distribution of emission sources in the region and meteorological factors such as wind, sunlight, temperature, humidity, rainfall, atmospheric pressure, and topography. As expressed in the amicus curiae brief submitted for the Sierra Club v. County of Fresno case (Friant Ranch Case) (SJVAPCD 2015), the air districts established and recommend that CEQA air quality analysis of criteria pollutants use significance thresholds that were set at emission levels tied to the region's attainment status, based on emission levels at which stationary pollution sources permitted by the air district must offset their emissions. Such offset levels allow for growth while keeping the cumulative effects of new sources at a level that will not impede attainment of the NAAQS. The health risks associated with exposure to criteria pollutants are evaluated on a regional level, based on the region's attainment of the NAAQS, the mass emissions significance thresholds used in CEQA air quality analysis are not intended to be indicative of any localized human health impact that a project may have (SCAQMD 2015; SJVAPCD 2015). Therefore, the project's exceedance of the mass regional emissions threshold (i.e., project construction $PM_{10}$ exceedance) from project-related activities does not necessarily indicate that the proposed project would cause or contribute to the exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels.

As discussed earlier and shown in Table 4.3-1, the southern portion of the EKAPCD, where the project is located, is currently classified as nonattainment for ozone and $PM_{10}$ standards, and as attainment and/or unclassified for all of the other criteria pollutant standards (EKAPCD 2017). Although ozone would not be directly emitted by construction equipment for the proposed project, the ozone precursors ROG and $NO_X$ would be emitted, as well as the other criteria pollutants CO, $SO_X$, $PM_{10}$ and $PM_{2.5}$. Given that ozone formation occurs through a complex photo-chemical reaction between $NO_X$ and ROG in the atmosphere with the presence of sunlight, the impacts of ozone are typically considered on a basin-wide or regional basis instead of a localized basis.

The health-based ambient air quality standards for ozone are established as concentrations of ozone and not as tonnages of their precursor pollutants (i.e., $NO_X$ and ROG). It is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM. Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases, and given the state of environmental science modeling in use at this time, it is not practical to determine whether, or the extent to which, a single project's precursor (i.e., $NO_X$ and ROG) emissions would potentially result in the formation of secondary ground-level ozone and the geographic and temporal distribution of such secondary formed emissions. Meteorology, the presence of sunlight, seasonal impacts, and other complex photochemical factors all combine to determine the ultimate concentration and location of ozone (SCAQMD 2015; SJVAPCD 2015). Running the regional-scale photochemical grid model used for predicting ozone attainment with the emissions from any individual project can be done, but it would not yield reliable information regarding a measurable increase in ozone concentrations sufficient to accurately quantify ozone-related health effects. Similarly, it would also not be feasible to identify a project's impact on the days of nonattainment per year. Furthermore, available models today are designed to determine regional, population-wide health impacts, and cannot accurately quantify ozone-related health impacts caused by ROG or $NO_X$ emissions from a local level (an individual project). Notwithstanding this

scientific constraint, CEQA air quality analyses have been using project-level mass-emission thresholds for ozone precursors ($NO_X$ and ROG) and other criteria pollutants, and the disconnect between project-level emissions and project-level health impact cannot be bridged at this time. Based on this information, a general description of the adverse health effects resulting from the project-level criteria pollutants is all that can be feasibly provided at this time.

With respect to emissions of the criteria pollutants of ROG, $NO_X$, CO, $SO_X$, and $PM_{2.5}$, project construction emissions would not exceed the EKAPCD significance thresholds, and would be substantially below by an order of magnitude or more; thus, it is not expected that project construction emissions would result in a substantial increase in criteria pollutant concentrations, and their related health effects in the air basin and impacts would be less than significant.

As shown in **Table 4.3-5,** *Cumulative Operational Emissions Near Project*, the cumulative operational emissions generated during the concurrent operation of the related projects within 6 miles of the project site and the proposed project would not exceed EKAPCD threshold levels. Therefore, impacts would be less than significant and no mitigation is required. In addition, operation of the project could result in a positive cumulative benefit related to air quality in the region because the renewable energy created by the proposed project could also displace the criteria pollutant emissions that emanate from the existing power generation sources (including natural gas, coal, hydro, nuclear, and other renewable resources). Operation of the proposed project could result in an overall net reduction of emissions by providing electricity that would displace energy produced from fossil fuels. Operation of the project does not exceed the project-level regulatory thresholds and, therefore, would not contribute to a long-term cumulative increase in criteria pollutants. The proposed project's incremental contribution to operational impacts would not be cumulatively considerable.

**TABLE 4.3-5: CUMULATIVE OPERATIONAL EMISSIONS NEAR PROJECT**

| | Annual Operational Emissions (tons) | | | | | |
|---|---|---|---|---|---|---|
| | **ROG** | **$NO_X$** | **CO** | **$SO_X$** | **$PM_{10}$** | **$PM_{2.5}$** |
| Project Operational Emissions | 0.1 | 0.6 | 0.5 | 0.0 | 0.8 | 0.1 |
| EKAPCD Threshold (tons per year) | 25 | 25 | -- | 27 | 15 | -- |
| Is Threshold Exceeded? | No | No | NA | No | No | NA |
| Total Operational Emissions within 6 miles | -3.2 | -40.0 | -20.7 | -34.4 | -15.1 | -10.5 |
| **Cumulative Plus Project** | -3.3 | -47.6 | -21.2 | -34.4 | -15.9 | -10.6 |
| EKAPCD Threshold (tons per year) | 25 | 25 | -- | 27 | 15 | -- |
| Is Threshold Exceeded? | No | No | NA | No | No | NA |
| Cumulative Pounds per Day Annualized [a] | -25.4 | -366.2 | -163.1 | -264.6 | -122.3 | -81.5 |
| EKAPCD Pounds/Day Threshold | 137 | 137 | -- | -- | -- | -- |
| Is Threshold Exceeded? | No | No | NA | NA | NA | NA |

[a] Annualized at 260 working days per year.

SOURCE: Ambient 2017.

It should be noted that, even with implementation of all available dust controls, the Mojave Desert is subject to high-wind events that result in dust being blown off site. Large portions of the project site are

unvegetated, and site soils have moderately high to high erodibility. Long-term operation of the proposed project would involve revegetation that would improve soil stability, and the installation of PV panels that would reduce wind fetch and, therefore, would reduce fugitive dust generation.
To ensure that project would be in compliance with all applicable EKAPCD rules and regulations and emissions are further reduced, the applicant would be required to implement and comply with a number of measures by regulation and would result in further emission reductions through their inclusion in project construction and long-term design. These measures are described above under Impact 4.3.1.

### Operation Localized Health Impacts from Regional Emissions (Friant Ranch Case)

Regulatory agencies have been evaluating impacts of criterial pollutants emissions from a regional level, and today's environmental models are designed to support such regional analysis. As discussed previously, converting project-level (local) criteria pollutants' air quality impact to a resulting human health impact is not practical with today's environmental science models. While operation of the proposed project would emit ozone precursor emissions of ROG and $NO_X$, because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases, and given the state of environmental science modeling in use at this time, it is infeasible to meaningfully convert specific project emissions levels of $NO_X$ or ROG emitted in a particular area to a particular concentration of ozone and resulting human health impact in that area. The same is true for secondary PM, which like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides and NOx. Therefore, a general description of the adverse health effects resulting from the project-level criteria pollutants is all that can be feasibly provided at this time.

With respect to emissions of the criteria pollutants of ROG, $NO_X$, CO, $SO_X$, $PM_{10}$, and $PM_{2.5}$, project operation would not exceed the EKAPCD significance thresholds, and would be substantially below by an order of magnitude or more; thus, it is not expected that project operational emissions would result in a substantial increase in criteria pollutant concentrations and their related health effects in the air basin and impacts would be less than significant.

### *Consistency with Existing Air Quality Plans*

Per the Kern County Planning and Natural Resources Department, construction emissions are not evaluated with respect to consistency with existing plans. As shown in Table 4.3-5, operation of the proposed project would have minimal operational emissions, which would not exceed any established EKAPCD significance thresholds for criteria pollutants. It should be noted that the proposed project could also function to reduce the air pollutant emissions within the MDAB to the extent that the power generated by the proposed project is used to offset power production from fossil-fueled power plants, and also by providing power to allow the displacement of fossil-fueled engines (such as agricultural pumps) with electrical power units. Thus, the proposed project would not have a cumulatively considerable impact with respect to consistency with existing air quality plans.

### *Mojave Desert 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 proposed project emissions are compared (as percentages) to the Kern County portion of the projected 2020 MDAB emissions and the projected 2020 MDAB emissions. **Table 4.3-6**, *Project Emissions and Percentages of the Kern County Portion of the MDAB*

*Emissions and the MDAB Emissions*, provides the emissions comparison of the project with Kern County and the MDAB.

**TABLE 4.3-6: PROJECT EMISSIONS AND PERCENTAGES OF THE KERN COUNTY PORTION OF THE MDAB EMISSIONS AND THE MDAB EMISSIONS**

| | Emissions (tons per year) | | | | | |
|---|---|---|---|---|---|---|
| | **ROG** | **$NO_X$** | **CO** | **$SO_X$** | **$PM_{10}$** | **$PM_{2.5}$** |
| **Emissions** | | | | | | |
| Project | 0.1 | 0.6 | 0.5 | 0.0 | 0.8 | 0.1 |
| Kern County portion of the MDAB | 13,651 | 41,720 | 18,871 | 1,825 | 13,286 | 5,110 |
| MDAB | 48,509 | 157,753 | 75,592 | 4,088 | 83,512 | 24,492 |
| **Project Percentage** | | | **Percentages** | | | |
| Of Kern County portion of the MDAB | 0.0007 | 0.0014 | 0.0026 | 0.00 | 0.006 | 0.002 |
| Of MDAB | 0.0002 | 0.0004 | 0.0007 | 0.00 | 0.001 | 0.0004 |

SOURCE: Ambient 2017.

Long-term increases in operational emissions of primary concern within the region (i.e., ROG, $NO_X$, CO, $SO_X$, $PM_{10}$ and $PM_{2.5}$) would be minimal and would not exceed applicable significance thresholds (refer to Table 4.3-5). However, as previously discussed and noted in Table 4.3-4, construction of the proposed project would result in temporary increases of PM10 that would exceed EKAPCD's significance thresholds. As a result, construction-generated emissions along with other cumulative projects located within the project area, would exceed EKAPCD's significance thresholds. Of particular concern with regard to regional air quality impacts are emissions of ozone-precursors (ROG and NOX) and PM10, for which the regional is designated nonattainment. For these reasons, cumulative regional air quality impacts associated with short-term construction activities would be considered potentially significant. It should be noted that operation of the project could result in a positive cumulative benefit related to air quality in the region because they would introduce a non-fossil-fuel-based energy source and thus offset the project's contribution during construction.

Despite the project's minimal contribution to emissions in the MDAB, mitigation measures are implemented to ensure that the proposed project would be in compliance with all applicable EKAPCD rules and regulations. However, during construction the project would result in cumulatively considerable impacts related to contribution to the MDAB Emissions Inventory that would be considered potentially significant.

### *Mitigation Measures*

Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4 would be required.

### *Level of Significance after Mitigation*

With implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4, project-generated construction emissions, as well as cumulative construction emissions, would exceed the $PM_{10}$ threshold. As a result of construction, the proposed project's contribution to cumulative short-term air quality impacts would result in a temporary significant and unavoidable impact. Operational impacts would be less than significant.

Section 4.4
# Biological Resources

## 4.4.1 Introduction

This section of the EIR/EA describes the affected environment and regulatory setting for biological resources either present or with the potential to be present on the project site. The section includes the physical and regulatory setting for the proposed project and proposed alternatives; an evaluation of the existing biological conditions on the project site and its vicinity; the criteria used to evaluate the significance of potential impacts on biological resources; the methods used in evaluating these potential impacts; and an analysis of potential impacts. The analysis presented in this section is based on a review of relevant literature, field reconnaissance surveys, and focused biological surveys.

The literature review included information available in peer-reviewed journals, standard reference materials, and relevant databases, including the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2019), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2019), Consortium of California Herbaria (CCH) (CCH 2019), and the U.S. Fish and Wildlife Service (USFWS) Threatened and Endangered Species Database and Critical Habitat Portal (USFWS 2019). The CDFW Special Animals List (CDFW 2018a) and Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2018b) were also reviewed to identify other special-status species with potential to occur in the vicinity of the project site based on the habitats that exist. Other sources of information reviewed include the most recent and available aerial photographs (Google Earth 2019), United States Geological Survey (USGS) 7.5-minute quadrangle topographic maps, soil survey maps (Natural Resource Conservation Science [NRCS] 2019), climatic data (Western Regional Climate Center [WRCC] 2019) and the project's site plans.

The analysis presented in this section is also based on the 2018 biological resources technical report (BRTR) prepared for this project (SWCA Environmental Consultants [SWCA] 2018a). The 2018 report included a discussion of surveys conducted for biological resources including USFWS protocol surveys for desert tortoise (*Gopherus agassizii*), CDFW protocol surveys for burrowing owl (*Athene cunicularia*), rare plants, and a general biological resource assessment for the project site. The property area, full methodologies, site conditions, and results of all field surveys are detailed in Appendix D of this EIR/EA.

## 4.4.2 Environmental Setting

### Regional Setting

The project site is located in southern Kern County, in the southwestern portion of the Mojave Desert, also known as the Antelope Valley. The project site is approximately 16 miles northwest of the City of Rosamond and 12 miles south of the City of Tehachapi as shown on **Figure 3-1**, *Project Vicinity*. The project site is located within a Development Focus Area (DFA) and Desert Renewable Energy Conservation Plan (DRECP) Variance Process Lands (**Figure 4.4-2,** *DRECP Planning Area*). However, the DRECP is only applicable to the federal Bureau of Land Management (BLM) portion of the project site (see Section 4.4.3).

## Climate

The climate in the Mojave Desert region where the proposed project is located consists of hot summer temperatures (average daily maxima above 100 Fahrenheit [°F]) and low annual precipitation (approximately 5 inches). Daily temperature swings of 30 °F can occur, with lows in the winter near freezing. Precipitation extremes are also common, with variations of 80 percent in annual precipitation and summer thunderstorms that 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 2005b). The project's elevation at approximately 3,000 feet above mean sea level (amsl) means that its temperature regime is somewhat cooler and moister than most areas of the Mojave Desert, with a high of 97.6 °F in July to a low of 32.9 °F in December. Average rainfall is 5.93 inches annually (WRCC 2019).

## 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 reptiles, birds and mammals. 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*) and bat species include the California myotis (*Myotis californicus*).

## Sensitive Natural Communities

Sensitive natural communities are designated as such by CDFW or occasionally in local policies and regulations, and are generally considered to have important functions or values for wildlife or are recognized as declining in extent and/or distribution. These communities are considered threatened enough to warrant some level of protection. CDFW tracks communities it believes to be of conservation concern through the CNDDB, and plant alliances or associations with a state rank of S1 through S3 are considered to be sensitive communities. Joshua tree woodland and scale broom scrub both have a state rank of S3, signifying both are CDFW sensitive natural communities. Joshua tree woodland occurs within the project site but scale broom scrub does not; however, its default setback distance, which is 200 feet from the edge of the community, as listed in the DRECP, intersects with the project site. No other sensitive natural communities are located within the project site.

## Surface Hydrology and Jurisdictional Waters

Within the arid and semi-arid western United States, limited precipitation restricts wetland and riparian resources to 1 to 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 (USACE 2008).

The Antelope Valley is an isolated basin that comprises approximately 1,580 square miles of alluvial valley in the western Mojave Desert. The project site is in the South Lahontan Hydrologic Region within the Antelope Hydrologic Unit and the Chafee Hydrologic Area. This basin is bounded by the Tehachapi Mountains to the northwest and the San Gabriel Mountains to the southwest.

## Wildlife Movement Corridors

The project is adjacent to the Tehachapi Mountains with few deep drainages or other well-defined corridor-like topographic features to channel wildlife movements into specific corridors. Instead, movement of terrestrial animals is likely diffuse and spread throughout the entire area. The renewable energy projects in the vicinity of the project, as well as the areas to the south, which are mainly native plant communities with scattered unpaved roads and residences, provide for largely unrestricted wildlife movement through natural or semi-natural habitats. While migratory birds do overfly the Antelope Valley, there are no significant stopover sites in the vicinity of the project site, as there are no riparian habitats or water bodies with abundant resources to attract concentrations of birds.

# Local Setting

The project site is located approximately 15 miles west of California State Route 14 (SR-14) and consists of approximately 383 acres, which is comprised of 233 acres of BLM-administered land and 150 acres of privately owned land. The project site is surrounded by the Manzana Wind Facility. The existing Manzana Wind Facility operations and maintenance (O&M) facility located 0.25 miles south of the project site would be the temporary laydown and parking area for construction of the proposed project. The project site is

crossed by an existing unimproved road that provides north to south access to a residence and a calcite mine located on private land north of the project site. A new road around the eastern edge of the project boundary would be constructed to match the width and surface type of the existing road. The project site is situated on mild, south-facing slopes below the Tehachapi Mountains. The elevation of the project site ranges from approximately 3,370 to 3,820 feet amsl. Existing development in the project vicinity includes the Manzana Wind Facility to the north, west, and south; the Pacific Wind Energy Project to the southwest; and the approved Catalina Renewable Energy Project to the east. Additional utility-scale solar photovoltaic (PV) projects that are planned, under construction, or operational are located to the southwest, south, and east of the project site; including the Rosamond Solar Array, Rosamond Solar Project, Antelope Valley Solar, and Recurrent Energy Astoria Solar.

## Plant Communities

A total of 107 plant species were identified on the project site during the biological surveys conducted in 2016 and 2018. Nine vegetation communities and land cover types occur within the project site and lease area as shown on **Figure 4-4.1**, *Vegetation Communities*. The mapped vegetation communities and land cover types were defined using nomenclature from the Manual of California Vegetation (MCV) (Sawyer et al. 2009). Red brome-Mediterranean grass grassland general plant community dominates the project site as a result of previous grazing. The MCV does not have classifications for areas mostly devoid of vegetation, or for vegetation communities dominated by non-native plants unless they have 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 the BRTR (see Appendix D).

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*.

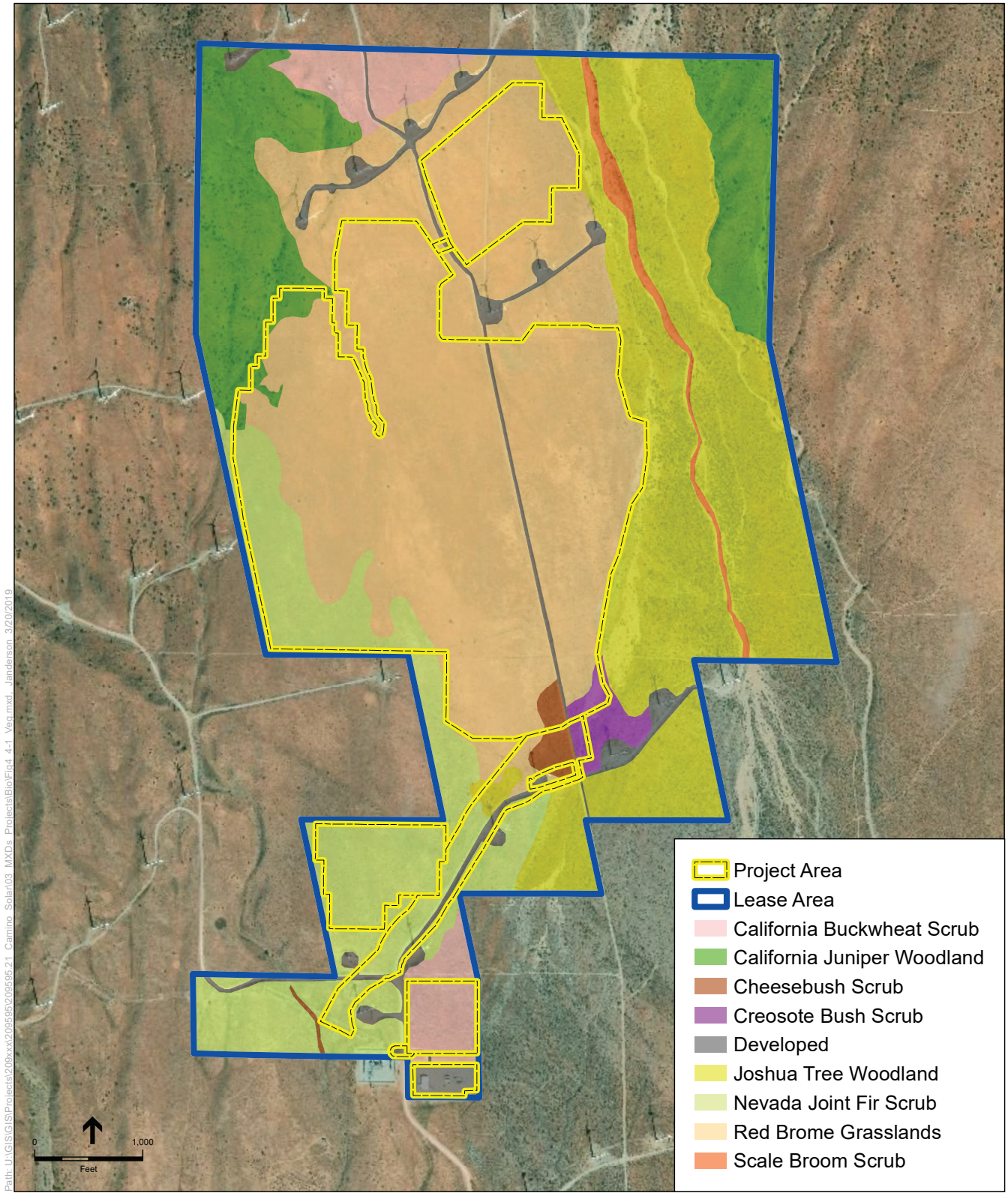
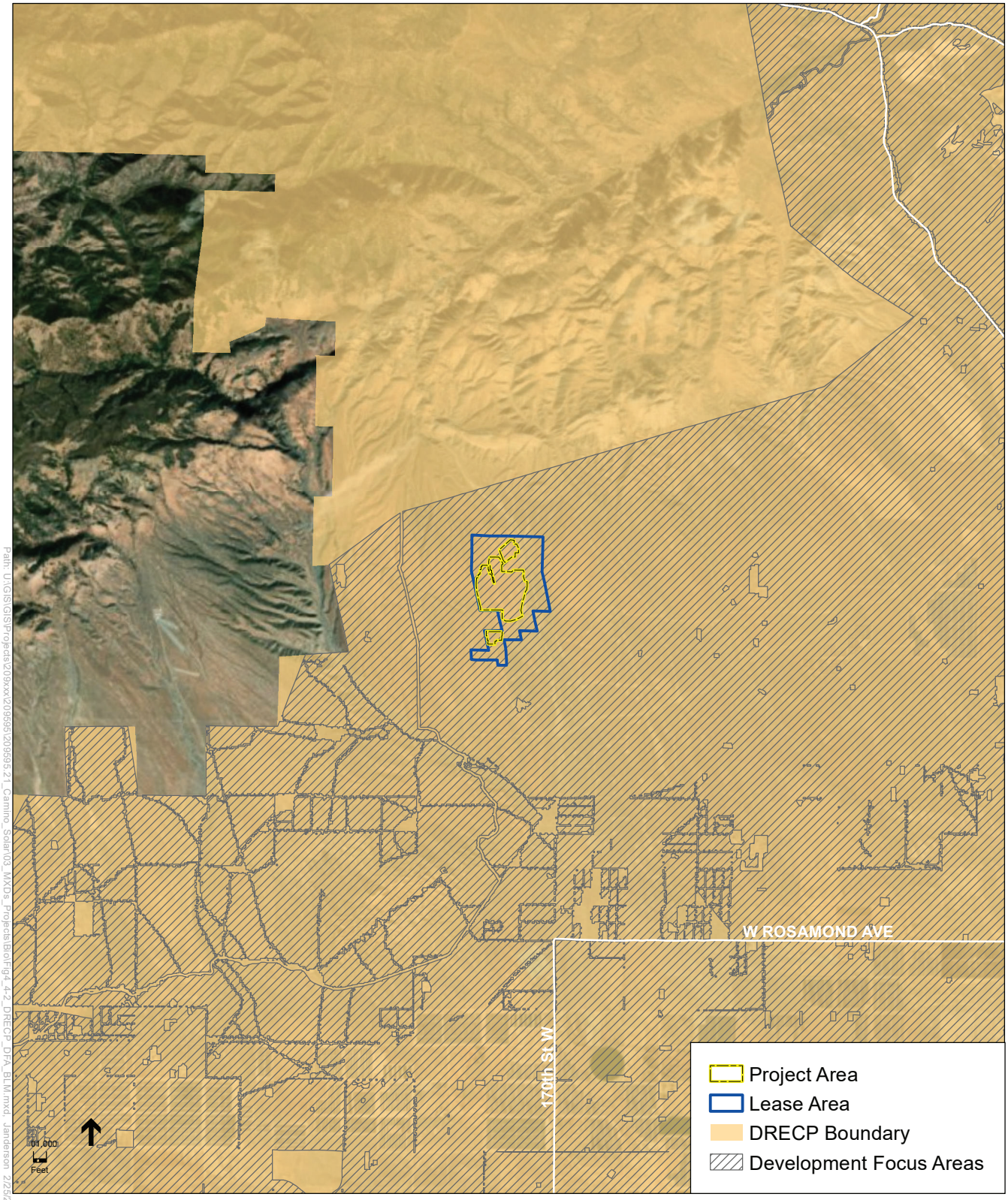



**Figure 4.4-1: VEGETATION COMMUNITIES AND COVER TYPES**




Path: U:\GIS\GIS\Projects\209xxx\209595\209595.21_Camino_Solar\03_MXDs_Projects\Bio\Fig4_4-2_DRECP_DFA_BLM.mxd, Janderson 2/25/2019

**Figure 4.4-2: PROJECT OVERVIEW**

**TABLE 4.4-1: VEGETATION COMMUNITY OR LAND COVER TYPE ON THE PROJECT SITE**

| Vegetation Community or Land Cover Type | Acreage |
|---|---|
| *Bromus rubens – Schismus* (arabicus, barbatus)<br>Herbaceous Semi-Natural Alliance<br>Red Brome or Mediterranean Grass Grasslands | 277 |
| *Juniperus californica* Woodland Alliance<br>California Juniper Woodland | 7 |
| *Yucca brevifolia* Woodland Alliance<br>Joshua Tree Woodland | 2 |
| *Larrea tridentata* Shrubland Alliance<br>Creosote Bush Scrub | 3 |
| *Eriogonum fasciculatum* Shrubland Alliance<br>California Buckwheat Scrub | 10 |
| *Ambrosia salsola* Shrubland Alliance<br>Cheesebush Scrub | 5 |
| *Ephedra nevadensis* Shrubland Alliance<br>Nevada Joint Fir Scrub | 67 |
| *Lepidospartum squamatum* Shrubland Alliance<br>Scale Broom Scrub | -* |
| Disturbed | 12 |

* Scale broom scrub occurs just outside the project boundary but this vegetation community is a CDFW sensitive natural community with a 200-foot setback. This setback intersects with the project site.

### *Red Brome-Mediterranean Grass Grassland*

Red brome–Mediterranean grass grasslands is a low biodiversity vegetation community dominated by non-native species. It is defined by the presence of more than 80 percent relative ground cover of either red brome (*Bromus rubens*) or Mediterranean grass (*Schismus arabicus* or *Schismus barbatus*), neither which are native to California. Red brome-Mediterranean grass grasslands may contain small percentages of emergent shrubs. Besides red brome and Mediterranean grass, emergent shrubs such as boxthorn (*Lycium* sp.), matchweed (*Guttierreza microcephala*), and California buckwheat (*Eriogonum fasciculatum*) were observed in this community.

### *Joshua Tree Woodland*

Joshua tree woodland is a diverse vegetation community that typically occurs on gentle alluvial fans, ridges, and gentle to moderate slopes with coarse sands, fine silts, gravel, or sandy loams. It occurs at elevations between 2,300 to 5,600 feet amsl, and it is defined as being at least 1 percent absolute ground cover of evenly distributed Joshua trees (*Yucca brevifolia*). The MCV and the DRECP use the same definition (at least 1 percent canopy cover of Joshua trees) for this alliance (Sawyer et al. 2009; Thomas et al. 2004). Other emergent shrubs or trees species observed in this community that may be present at the project site

include California buckwheat, Nevada joint fir (*Ephedra nevadensis*), matchweed, winter fat (*Krascheninnikovia lanata*), and California juniper (*Juniperus californica*).

### *California Juniper Woodland*

California juniper woodland is a diverse vegetation community that typically occurs on ridges, slopes, valleys, alluvial fans, and valley bottoms, where soils are porous, rocky, coarse, sandy, or silty, and often very shallow. It generally occurs at elevations between 2,000 and 8,000 feet amsl, and is defined by areas where California juniper is dominant or co-dominant with other shrubs, represents at least 1 percent of absolute cover, and represents more than 50 percent relative cover in the shrub layer. Some other emergent shrubs or trees may occur, such as cacti (*Opuntia* spp.), and California buckwheat, which was present at the project site.

### *Creosote Bush Scrub*

Creosote bush scrub is a diverse vegetation community that occurs throughout large portions of the Mojave Desert. It typically occurs on alluvial fans, bajadas, upland slopes, minor intermittent washes (areas where soils are well drained). It is usually found at elevations from 200 feet below mean sea level to 3,300 feet amsl, and it is defined as areas where there is a shrub canopy less 9 feet tall in which creosote bush is dominant or co-dominant; other shrubs may be present.

### *California Buckwheat Scrub*

California buckwheat scrub is a variable vegetation community that occurs in a wide range of habitats and locations. Its distribution within the survey area is limited to north of the project site, the battery site, and surrounding land that appears to have been disturbed in the recent past; Google Earth imagery from 1989 appears to indicate that a wildfire may have occurred in the area. It is usually found at elevations from 0 to 3,950 feet amsl, and it is defined as areas with a shrub canopy under 6 feet tall in which California buckwheat is dominant or co-dominant (greater than or equal to 50 percent relative cover); other shrubs may be present. As an early successional species, California buckwheat commonly colonizes disturbed land such as road cuts and grazed and burned areas. Within the project area, California buckwheat was often co-dominant, or nearly so, with Nevada join fir; there are no vegetation communities in the MCV that describe the co-occurrence of these two species, but it is not unusual because they are both found in early successional stages.

### *Cheesebush Scrub*

Cheesebush scrub is a vegetation community that typically occurs in valleys, flats, and along low-gradient channels and washes, where soils are alluvial, sandy and gravelly, or on disturbed desert pavement. It is usually found between sea level and 5,250 feet amsl. In this community type within the project site, cheesebush (*Ambrosia salsola*) is the dominant shrub and the shrub canopy is less than 6 feet high and relatively open, other shrubs may be present.

### *Nevada Joint Fir Scrub*

Nevada joint fir scrub is a vegetation community that typically occurs on dry, open slopes, ridges, breaks with southern exposures, canyons, sides of arroyos, floodplains, and washes, where soils are well drained, gravelly, or rocky, and may be alkaline or saline. It is usually found at elevations from 3,300 to 5,900 feet amsl. This vegetation alliance is defined by the presence of Nevada join fir representing at least 2 percent

absolute ground cover, and it is usually 2 to 3 times more common than other shrubs. At the project site, other shrub species in this vegetation community included observed California buckwheat, spiny hopsage (*Grayia spinosa*), and Joshua tree.

### *Scale Broom Scrub*

Scale broom scrub is a vegetation community that typically occurs in alluvial environments that are intermittently or rarely flooded. It is usually found at elevations between 160 to 4,920 feet amsl, and it is defined as areas with a shrub canopy under 6 feet tall in which scale broom (*Lepidospartum squamatum*) is present at greater than 1 percent cover in alluvial environments; other shrubs may be present. Some areas within the survey area may currently have less than 1 percent cover due to the extreme flooding event in 2015 that scoured the stream channel.

### *Disturbed*

This land cover type is not a vegetation community, but rather a descriptor for areas mostly devoid of vegetation due to anthropogenic activities, and which have low potential to support native species. Disturbed/developed areas may include roads, buildings, and parking lots. Disturbed/developed usually results in conditions that promote the scattered growth of non-native species, including the following that were observed on the project site: foxtail chess (*Bromus madritensis* ssp. *rubens*), cheatgrass (*Bromus tectorum*), Mediterranean grass, shortpod mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), and red-stemmed filaree (*Erodium cicutarium*). At the project site, the unimproved road that runs along the eastern edge of the gen-tie corridor and through the BLM parcel was mapped as disturbed/developed.

## Wildlife Species

Wildlife species observed or detected on the project site include five reptiles, seventeen birds, and eight mammals. These species commonly occur in the Mojave Desert. A complete list of species observed during project surveys is provided in Appendix F of the BRTR. A full copy of the BRTR is provided in Appendix D of this EIR/EA.

## 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 *California Environmental Quality Act (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 [NPPA]) or Sections 2062 and 2067 (CESA) of the Fish and Game Code, and are eligible for state listing;
- Species covered under an adopted National Community Conservation Planning (NCCP) Act/Habitat Conservation Plan (HCP) or DRECP;
- Designated as Sensitive by the BLM;
- 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*.); and
- 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 Migratory Bird Treaty Act (MGTA) 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 in Sections 4.10.1, *Special-Status Plants,* and 4.11.2, *Special-Status Wildlife,* of the BRTR in Appendix F. **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*, 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. The "Potential to Occur" categories indicated in Table 4.4-2 and Table 4.4-3 are defined as follows:

- **Unlikely:** The project site and/or immediate area do not support suitable habitat for a particular species, and therefore the project is unlikely to impact this species.
- **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 during focused surveys or other site visits.

## Plant Species

Of the eight plant species identified in Table 4.4-2, none were confirmed present. Three regulated native plants species, Joshua tree (*Yucca brevifolia*), beavertail cactus (*Opuntia basilaris* var. *basilaris*) and silver cholla[1] (*Cylindropuntia echinocarpa*) are covered only under the California Desert Native Plants Act (CDNPA) and were mapped during 2016 surveys. Approximately 750 Joshua tree, 31 beavertail cactus, and 23 silver cholla were identified on the project site.

[1] The scientific name for Silver Cholla in the 2018 BRTR was *Opuntia echinocarpa*, however, the scientific name has been updated to *Cylindropuntia echinocarpa* per NRCS.

**Joshua Tree.** The Joshua tree (*Yucca brevifolia*) is a large and widely recognized member of the Agave family that occurs in California, southwestern Utah, western Arizona, and southern Nevada at elevations from 1,600 to 7,200 feet amsl. In California it occurs in six counties: Mono, Inyo, Kern, Los Angeles, San Bernardino, and Riverside. Individual Joshua trees do not have any sensitive status according to CNPS or CDFW, but Joshua tree woodland is considered a sensitive natural community. In 2011, the Joshua tree was evaluated for inclusion in the California Rare Plant Inventory by CNPS but was rejected because it was too common (CNPS 2019). The Joshua tree is not a focus species under the DRECP, is not designated as a BLM Sensitive species, and does not meet the criterion to be a special-status species as defined by the DRECP, and therefore does not require any project setback (BLM 2016). The 2015 petition to list Joshua tree as a threatened species under the federal Endangered Species Act was rejected in August 2019.

Joshua trees are conspicuous in the landscape, reaching heights of up to 50 feet, and bloom in April and May. The Joshua tree occurs primarily in shrub-dominated plant communities, and is most numerous in Joshua tree woodlands, where it must comprise at least 1 percent of canopy cover (Sawyer et al. 2009). Occurrences of Joshua trees and Joshua tree woodland are not tracked in the CNDDB or by CNPS; however, records are available from the CCH, which is not restricted to sensitive species.

Joshua trees are present at the project site; approximately 750 individuals and clones were mapped during the botanical surveys. Joshua trees are most numerous in the eastern portion of the project site, near the large drainage outside the project boundary (Appendix D, Figure 11). Joshua trees are present in lower densities and generally as smaller individuals in other plant communities at the proposed project.

**Beavertail Cactus.** The beavertail cactus (*Opuntia basilaris var. basilaris*) is a native cactus species that is not listed on any state or federal lists as threatened or endangered. This native desert plant is protected under the California Desert Native Plant Act (CNDPA) from harvesting or selling. Approximately 31 beavertail cacti were observed on the project site. Therefore, this species is widely abundant on the project site.

**Silver Cholla.** The silver cholla (*Cylindropuntia echinocarpa*) is a native cactus species that is not listed on any state or federal lists as threatened or endangered. This native desert plant is protected under the California Desert Native Plant Act (CNDPA) from harvesting or selling. Approximately 23 silver cholla cacti were observed on the project site. Therefore, this species is widely abundant on the project site.

## Special-Status Plants

Twenty-seven special-status plant species were identified in the literature review and database search as historically occurring in the region, 19 of these species were determined not likely to occur due to lack of suitable habitat or range constraints (Appendix D, Table 5). The CNPS's Rare Plant Inventory, CNDDB, and CCH were searched to determine special-status species likely to occur within the project vicinity. Biological survey information from nearby projects (BLM 2014) were also considered. Using this information, followed by onsite observations in the field, a list of special-status plants with potential to occur on the project site and within its vicinity was prepared. Table 4-4.2 identifies the regulatory status, habitat requirements, and blooming period for each plant species that has some potential to occur or is a DRECP Focus Species, as well as the potential for the species to occur on the project site based on focused survey results and the presence or absence of suitable habitat.

**TABLE 4.4-2: SPECIAL-STATUS PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE**

| Scientific Name | Common Name | Federal Status[1] | State Status[2] | DRECP Focus Species | BLM Sensitive | CRPR[3] | Habitat Requirements | Potential to Occur |
|---|---|---|---|---|---|---|---|---|
| *Chorizanthe spinosa* | Mojave spineflower | None | None | No | No | 4.2 | Chenopod scrub, Mojavean desert scrub, Joshua tree woodland, playas. Sometimes on alkaline soils. 0—4,300 feet. Blooms March through July. | **Low.** Habitat at the project is marginal, species not detected during surveys. Closest record is 12 miles to the southeast. |
| *Cordylanthus rigidus* ssp. *brevibracteatus* | Short-bracted bird's-beak | None | None | No | No | 4.3 | Chaparral, lower montane coniferous forest, pinyon-juniper woodland, upper montane coniferous forest. In openings, on granitic substrate. 3,000—7,000 feet. Blooms July through October. | **Low.** Habitat at the project is marginally suitable. Closest record is 4.5 miles to the north. |
| *Cryptantha clokeyi* | Clokey's cryptantha | None | None | No | Sensitive | 1B.2 | Gravelly slopes, ridge crests, and in desert woodlands. 2,400-4,500 feet. Blooms in April. | **Low.** Habitat at the project is suitable, but species not detected during surveys at the project. Nearest record is 12.5 miles to the south. |
| *Delphinium parryi* ssp. *purpureum* | Mt. Pinos larkspur | None | None | No | No | 4.3 | Pinyon-juniper woodland, Mojavean desert scrub, chaparral. 3,000—8,000 feet. Blooms May through June. | **Low.** Suitable habitat is present, but species not detected during surveys at the project. Closest record is 6 miles to the north. |
| *Eschscholzia lemmonii* ssp. *kernensis* | Tejon poppy | None | None | No | No | 1B.1 | Valley and foothill grassland, chenopod scrub. Little information available on microhabitat. 450—4,500 feet. Blooms February through May. | **Low.** Marginally suitable habitat is present, but not detected during surveys at the project. Closest record is 6 miles to the west. |

**TABLE 4.4-2: SPECIAL-STATUS PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE**

| Scientific Name | Common Name | Federal Status[1] | State Status[2] | DRECP Focus Species | BLM Sensitive | CRPR[3] | Habitat Requirements | Potential to Occur |
|---|---|---|---|---|---|---|---|---|
| *Nemacladus secundiflorus* var. *robbinsii* | Robbins' nemacladus | None | None | No | No | 1B.2 | Chaparral, valley and foothill grassland. Dry, sandy or gravelly slopes. 1,100—5,500 feet. Blooms April through June. | **Low.** Habitat at the project is suitable, but not detected during surveys. The closest record is 4 miles to the east. |
| *Saltugilia latimeri* | Latimer's woodland-gilia | None | None | No | Sensitive | 1B.2 | Chaparral, Mojavean desert scrub, pinyon and juniper woodland. Rocky or sandy substrate; sometimes in washes, sometimes limestone. 400—7200 feet. Blooms March through June. | **Low.** Habitat at the project site is suitable, but not detected during surveys. Nearest record is 6 miles to the northeast. |
| *Syntrichopappus lemmonii* | Lemmon's syntrichopappus | None | None | No | No | 4.3 | Chaparral, Joshua tree woodland, pinyon and juniper woodland. Decomposed granite; sandy or gravelly soils. 1,500—6,000 feet. Blooms April through June. | **Low.** Habitat at the project site is suitable, but not detected during surveys. Nearest record is 6 miles to the northeast. |

[1] Description of Federal Codes: FE = Federally endangered. FT = Federally threatened.
[2] Description of State Codes: SE = State endangered.
[3] Description of CRPR 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 4.2 = Plants with a limited distribution or that are infrequent over a broader area in California; moderately threatened in California.
CRPR 4.3 = Plants with a limited distribution or that are infrequent over a broader area in California; not very threatened in California.
SOURCES: SWCA 2018a.

Of the eight special-status plant species identified in Table 4.4-2, all eight species have a low potential to occur based on suitable habitat or known occurrences in the vicinity of the project site and absence during special-status plant during the appropriate blooming period: Robbin's nemacladus (*Nemacladus secundiflorus* var. *robbinsii*), short-bracted bird's-beak (*Cordylanthus rigidus* ssp. *brevibracteatus*), Mt. Pinos larkspur (*Delphinium parryi* ssp. *purpureum*), Latimer's woodland-gilia (*Saltugilia latimeri*), Lemmon's syntrichopappus (*Syntrichopappus lemmonii*), Mojave spineflower (*Chorizanthe spinosa*), Clokey's cryptantha (*Cryptantha clokeyi*), and Tejon poppy (*Eschscholzia lemmonii* ssp. *kernensis*). Species with a high to moderate potential to occur based on the initial desktop review as stated within the BRTR are described further below.

**Robbins' Nemacladus.** Robbins' nemacladus (*Nemacladus secundiflorus* var. *robbinsii*) is a small annual herb that typically blooms between April and June. It has a CRPR of 1B.2, indicating that it is rare throughout its range, and is moderately threatened in California. Robbins' nemacladus typically occurs in chaparral and grassland habitats, on dry sandy or gravelly slopes between 1,100 and 5,500 feet amsl. The closest CNDDB record of this species is 25 miles east of the proposed project. However, the CCH includes several records of Robbins' nemacladus in the Antelope Valley from 2010, along the Tehachapi Renewable Transmission Project route; these are the only records of the species in the Mojave Desert. The closest of these locations is approximately 4 miles east of the project site.

Habitats at the project site are suitable for this species and it was determined to have a high potential to occur. However, it was not detected during surveys conducted during the appropriate blooming period.

**Short-bracted Bird's Beak.** Short-bracted bird's beak (*Cordylanthus rigidus* ssp. *brevibracteatus*) is an annual herb that is known from Kern and Tulare counties; the project site is at the southern end of its range. It has a CRPR of 4.3, meaning that it has a limited distribution or is infrequent over a broad area of California, and that it is not very threatened in California. This species is usually found in granitic openings in Jeffrey pine and pinyon-juniper forest, as well as in sagebrush scrub. It is known from elevations between 3,000 and 7,000 feet amsl, and blooms between July and October. The nearest record of this species in the CCH database in 4.5 miles to the north, in the Tehachapi Mountains. Short-bracted bird's beak was not detected during botanical surveys. Habitat at the project site is nominally suitable, but this species is not likely to occur due to the low elevation of the project site in the southern part of the range.

**Mt. Pinos larkspur.** Mt. Pinos larkspur (*Delphinium parryi* ssp. *purpureum*) is a small herbaceous perennial native to Southern California that occurs in Santa Barbara, Ventura, and Kern Counties. This species has a CRPR of 4.3, indicating that it has a limited distribution, but is not very endangered in California (fewer than 20 percent of occurrences are threatened and/or there is a low degree and immediacy of threat, or no current threats known). Mt. Pinos larkspur occurs between 3,000 and 8,000 feet amsl, in chaparral, Mojavean desert scrub, and pinyon and juniper woodlands. The nearest record of this species is 6 miles north of the project site. Potentially suitable habitat at the project site includes the Creosote Bush Scrub and the California Juniper Woodland. This species was not detected during surveys during the appropriate blooming period.

**Latimer's woodland-gilia.** Latimer's woodland-gilia (*Saltugilia latimeri*) has only recently been recognized as a full species, and was described in 2001 (Weese and Johnson 2001). Latimer's woodland-gilia has a CRPR of 1B.2, meaning that it is rare throughout its range, and is moderately threatened in California. This species is a small plant, up to 12 inches tall, that is endemic to dry slopes with soils varying from rocky to sandy. Habitats include chaparral, Mojavean desert scrub, and pinyon and juniper woodland. This species is an herbaceous annual, blooming between March and June.

The nearest CNDDB record of Latimer's woodland-gilia is approximately 6 miles to the northeast of the project site. The desert scrub habitats at the project site may be suitable, and so this species is considered to have a moderate potential to occur; however, it was not detected during the two focused surveys conducted during its blooming period.

**Lemmon's syntrichopappus.** Lemmon's syntrichopappus (*Syntrichopappus lemmonii*) is a member of the sunflower family (Asteraceae) that is found in Southern California, primarily in the hills and mountains that bound the Antelope Valley. This species has a CRPR of 4.3, meaning that it has a limited distribution, but is not very endangered in California (fewer than 20 percent of occurrences are threatened and/or there is a low degree and immediacy of threat or no current threats known). It occurs in open sandy and gravelly soils in habitats ranging from chaparral to Joshua tree woodland and pinyon-juniper woodlands.

The closest record in the CNDDB is approximately 6 miles to the northeast of the project site. Considering the conditions at the project site, the potential for Lemmon's syntrichopappus to occur at the proposed project was determined to be moderate; however, it was not detected during surveys conducted during the appropriate blooming period for this species (April to June).

## Special-Status Wildlife

Based on the literature review and database search, twenty-four special-status wildlife species (two invertebrates, one amphibian, three reptiles, eleven birds, and seven mammals) have been historically recorded within the vicinity of the project site and/or have some potential to occur. Of these, 13 were determined not likely to occur due to lack of suitable habitat or range constraints (Appendix D, Table 6). Species with some potential to occur and/or are DRECP Focus Species are listed in **Table 4.4-3**, which identifies their regulatory status and habitat requirements, as well as the potential for the species to occur on the project site or immediate vicinity based on recent survey results. They are further discussed following the table.

**TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE**

| Scientific Name | Common Name | Federal Status[1] | State Status[2] | DRECP Focus Species | BLM Sensitive | Habitat Requirements | Potential to Occur |
|---|---|---|---|---|---|---|---|
| **Invertebrates** | | | | | | | |
| *Bombus crotchii* | Crotch bumble bee | None | Candidate for SA | No | No | Coastal California to Sierra-Cascade crest, and to Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*. | **Moderate.** Potential food plants are present. The nearest record is 10 miles away. |
| *Euphilotes battoides comstocki* | Comstock's blue butterfly | None | SA | No | No | Valley and foothill grasslands, requires host *Eriogonum* sp. (buckwheats). | **Moderate.** Potential food plants are present. Closest record is 11 miles north of the project site. |
| **Amphibians** | | | | | | | |
| *Batrachoceps stebbinsi* | Tehachapi slender salamander | None | ST | Yes | Sensitive | Uncommon in suitable habitat in a small number of isolated localities in the Piute and Tehachapi Mountains of Kern County and perhaps in Los Angeles and Ventura Counties. Sierra Nevada and Tehachapi Mountains, oak and mixed woodlands, arid to semiarid areas. Preferred habitats include valley foothill hardwood conifer and valley foothill riparian. 2,000 to 4,600 feet. | **Not Likely to Occur.** No suitable habitat at project site. Closest record is 9 miles to the west. |

**TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE**

| Scientific Name | Common Name | Federal Status[1] | State Status[2] | DRECP Focus Species | BLM Sensitive | Habitat Requirements | Potential to Occur |
|---|---|---|---|---|---|---|---|
| **Reptiles** | | | | | | | |
| *Anniella pulchra* | Northern California legless lizard | None | SSC | No | No | Contra Costa County south to San Diego, within a variety of open habitats. This element represents California records of *Anniella* not yet assigned to new species within the *Anniella pulchra* complex. Variety of habitats; generally in moist, loose soil. Prefers soils with a high moisture content. | **High.** Described as common in Joshua/Juniper woodland by Papenfuss and Parham 2013. |
| *Gopherus agassizii* | Desert tortoise | FT | ST | No | No | Most desert habitats, especially desert scrub, desert wash, and Joshua tree habitats; from 1,000—5,000 feet. | **Absent.** Desert tortoise has not been recorded at the site after multiple years of protocol-level surveys, or during protocol surveys at adjacent projects. |
| *Phrynosoma blainvillii* | Coast horned lizard | None | SSC | No | Sensitive | Valley-foothill hardwood, conifer, and riparian habitats; pine-cypress, juniper and annual grasslands. | **High.** This species occurs in foothills around the Antelope Valley and was found during surveys at MWF.[3] |
| **Birds** | | | | | | | |
| *Agelaius tricolor* | Tricolored blackbird | None | ST | Yes | Sensitive | Freshwater marshes, agricultural areas, willow and cottonwood woodland, grasslands | **Not Likely to Occur.** No suitable habitat is present at the project site, and the closest record is 11 miles to the southwest. |
| *Aquila chrysaetos* | Golden eagle | BGEPA | FP | Yes | Sensitive | Most open habitats in California, such as rolling hills, mountains, sage-juniper flats, and desert. | **Present (foraging).** Suitable nesting habitat (cliffs and large trees) is not present in the project site. Documented at adjacent MWF[3] during migration surveys. |

**TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE**

| Scientific Name | Common Name | Federal Status[1] | State Status[2] | DRECP Focus Species | BLM Sensitive | Habitat Requirements | Potential to Occur |
|---|---|---|---|---|---|---|---|
| *Athene cunicularia* | Burrowing owl | None | SSC | Yes | Sensitive | Grasslands, deserts, shrub-steppe, agricultural fields. Requires open areas with low vegetation and generally less than 30% shrub cover. | **Present.** Habitat at the project site is suitable, and observed at the eastern edge of the project site in fall 2011. |
| *Buteo swainsoni* | Swainson's hawk | None | ST | Yes | Sensitive | Open grassland, shrublands, croplands. | **Present (migration).** No nests identified within 5 miles of the project site. Suitable nesting structures (Joshua trees) are present on the project site. Documented at MWF[3] during migration surveys. |
| *Charadrius montanus* | Mountain plover | None | SSC | Yes | Sensitive | Agricultural fields, playas, low grasslands, burned areas. | **Not Likely to Occur.** There is no suitable habitat for this species at the project site, and the nearest record is 7 miles to the south. |
| *Coccyzus americanus occidentalis* | Western yellow-billed cuckoo | FT | SE | Yes | Sensitive | Riparian forest, requires dense riparian vegetation for nesting sites, often in willow or cottonwoods. | **Not Likely to Occur.** Habitat at the project site is not suitable, but could migrate through the area. No records of this species in the records search area. |
| *Empidonax traillii extimus* | (Southwestern) willow flycatcher | FE | SE[4] | Yes | No | Meadows, riparian scrub, riparian woodlands, wetlands. Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2,000-8,000 feet elevation. | **Not Likely to Occur.** Habitat at the project site is not suitable, but could migrate through the area. No records of this species in the records search area. |

**TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE**

| Scientific Name | Common Name | Federal Status[1] | State Status[2] | DRECP Focus Species | BLM Sensitive | Habitat Requirements | Potential to Occur |
|---|---|---|---|---|---|---|---|
| *Gymnogyps californianus* | California condor | FE | SE, FP | Yes | No | Chaparral, valley and foothill grassland. Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate elevation. | **Low (foraging).** Locally, this species occurs in the nearby mountains and hills. There is limited prey base at the project site and no topography to provide lift. However, this species has the ability to fly great distances while foraging, and occurs in the in Tehachapi Mountains. No records of this species in the CNDDB records search area. |
| *Lanius ludovicianus* | Loggerhead shrike | None | SSC | No | No | Broken woodlands, savannah, pinyon-juniper, Joshua tree, riparian woodlands, desert oases, scrub and washes. | **Present.** Observed on site. |
| *Rallus obsoletus yumanensis* | Yuma Ridgway's rail | FE | ST | Yes | No | Freshwater marsh, swamps, wetlands. Nests in fresh-water marshes along the Colorado River and along the south and east ends of the Salton Sea. | **Not Likely to Occur.** Habitat at the project site is not suitable, but could migrate through the area. No records of this species in the records search area. |
| *Vireo bellii pusillus* | Least Bell's vireo | FE | SE | Yes | No | Riparian forest, riparian scrub, riparian woodland. Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet. | **Not Likely to Occur.** Habitat at the project site is not suitable, but could migrate through the area. No records of this species in the records search area. |

**TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE**

| Scientific Name | Common Name | Federal Status[1] | State Status[2] | DRECP Focus Species | BLM Sensitive | Habitat Requirements | Potential to Occur |
|---|---|---|---|---|---|---|---|
| **Mammals** | | | | | | | |
| *Onychomys torridus tularensis* | Tulare grasshopper mouse | None | SSC | No | Sensitive | Hot, arid valleys and scrub deserts in the southern San Joaquin Valley; chenopod scrub. | **High.** Suitable habitat is present. Cannot be distinguished in the field from southern grasshopper mouse; see description in text. |
| *Onychomys torridus ramona* | Southern grasshopper mouse | None | SSC | No | No | Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Chenopod scrub. | **Moderate.** Suitable habitat is present but project site is north of recognized range. Closest CNDDB record is 29 miles south of the project site. |
| *Perognathus alticolus inexpectatus* | Tehachapi pocket mouse | None | SSC | No | No | Habitat is not well defined; generally found in grasslands, desert scrub, pine woodlands, fallow fields. | **High.** Habitat at the project site may be suitable. The closest record is 2.6 miles to the east. |
| *Perognathus inornatus* | San Joaquin pocket mouse | None | None | No | Sensitive | Grassland, oak savanna and arid scrubland in the southern Sacramento Valley, Salinas Valley, San Joaquin Valley and adjacent foothills, south to the Mojave Desert. Cismontane woodland, Mojavean desert scrub, valley and foothill grassland. | **High.** Habitat at the project site is suitable. The closest record is 2 miles to the south. |
| *Taxidea taxus* | American badger | None | SSC | No | No | Grasslands, savannahs, mountain meadows, Joshua tree woodlands, and desert scrub. Requires friable soils. | **High.** Vegetation communities within the project site are suitable habitat, and one individual was observed during the MWF[3] surveys. |
| *Vulpes macrotis arsipus* | Desert kit fox | None | FGC 460 | No | No | Desert scrub, washes, and arid grasslands | **Present.** Habitat at the project site is suitable, and an active den was observed at the edge of the MWF[3] substation in 2016. Species not tracked in the CNDDB. |

**TABLE 4.4-3: SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE**

| Scientific Name | Common Name | Federal Status[1] | State Status[2] | DRECP Focus Species | BLM Sensitive | Habitat Requirements | Potential to Occur |
|---|---|---|---|---|---|---|---|
| *Xerospermophilus mohavensis* | Mohave ground squirrel | None | ST | Yes | Sensitive | Open desert scrub, alkali scrub & Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert. | **Not Likely to Occur.** Generally considered extirpated in the Antelope Valley. No records within 5 miles of the project site. |

[1] Description of Federal Codes: BGEPA = Bald and Golden Eagle Protection Act, FE = Federally endangered, FT = Federally threatened.

[2] Description of State Codes: SA = Special Animal, SE = State endangered, ST = State threatened, FP = California fully protected, SSC = California Species of Special Concern, FGS 460 = Take prohibited under FGC 460.

[3] MWF = Manzana Wind Facility.

[4] All subspecies of willow flycatcher are CESA-listed; only the southwestern subspecies is ESA listed

SOURCES: SWCA 2018a.

Of the 24 special-status wildlife species identified in Table 4.4-3 above, five species were determined to be present on the project site: foraging golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), migrating Swainson's hawk (*Buteo swainsoni*), desert kit fox (*Vulpes macrotis arsipus*) and loggerhead shrike (*Lanius ludovicianus*). Six species were determined to have a high potential to occur on the project site: northern California legless lizard (*Anniella pulchra*), coast horned lizard (*Phrynosoma blainvillii*), Tulare grasshopper mouse (*Onychomys torridus tularensis*), Tehachapi pocket mouse (*Perognathus alticolus inexpectatus*), San Joaquin pocket mouse (*Perognathus inornatus*), and American badger (*Taxidea taxus*). Three species was determined to have a moderate potential to occur on the project site: crotch bumble bee, Comstock's blue butterfly, and southern grasshopper mouse (*Onychomys torridus ramona*). One species was determined to have a low potential to occur on the project site: foraging California condor (*Gymnogyps californianus*). Although desert tortoise was determined not likely to occur, a discussion for this species is included because project-specific surveys were conducted. Species that are present or have high to moderate potential to occur are described further below.

## *Invertebrates*

### Crotch Bumble Bee

The crotch bumble bee (*Bombus crotchii*) occurs primarily in Southern California and was historically common in the Central Valley. It is included on the CDFW list of Special Animals (CDFW 2018a) does not have any formal federal protections but is currently a candidate as endangered under CESA. This species has been extirpated from most of its known range because of intensification of agriculture and urbanization, among other factors. Known food plants include members of the following genera: *Antirrhinum, Phacelia, Dendromecon, Eschscholzia* (poppies), and *Eriogonum* (buckwheats).

The project site includes *Phacelia, Eschscholzia,* and *Eriogonum,* which may support this species, although it was not recorded during surveys. The closest CNDDB record of this species is approximately 10 miles from the project site. The crotch bumble bee has a moderate potential to occur on the project site.

### Comstock's Blue Butterfly

Comstock's blue butterfly (*Euphilotes battoides comstocki*) is a small butterfly with a wingspan of approximately 0.75 inch. It is included on the CDFW list of Special Animals (CDFW 2018a) but does not have any formal state or federal protections. Buckwheats (*Eriogonum* sp.) are the main food plant for Comstock's blue butterfly. There is one generation per year, and adults may be found in late spring and summer when host plants are in bloom. During the flight season, males constantly patrol host plants in search of receptive females. Individual eggs are laid on the flowers of host plants. The less conspicuous caterpillars and chrysalises can be found from September through March.

There is buckwheat on the project site, which may support this species, although it was not observed incidentally during surveys for the Manzana or Tylerhorse projects. The closest record of Comstock's blue butterfly is approximately 11 miles north of the project site. The Comstock's blue butterfly has a moderate potential to occur at the project site.

### *Reptiles*

**Northern California Legless Lizard.** The northern California legless lizard (*Anniella pulchra*), a CDFW Species of Special Concern (SSC), occurs in coastal dunes, valley-foothill areas, chaparral, coastal scrub, desert scrub, sandy washes, and sometimes anthropogenically modified habitats. It requires the presence of some soil moisture or moist refuges. All legless lizards spend the majority of their time underground and are therefore difficult to detect. It was recently determined that the California legless lizard species in the Antelope Valley along the Tehachapi mountains are of the Northern California legless lizard species (CNDDB 2019; Papenfuss and Parham 2013).

Northern California legless lizard was not detected during reconnaissance surveys conducted at the project site, which contains generally dry soils that provide few moist refuges for this species. The closest CNDDB record is approximately 2 miles to the east of the project site. Northern California legless lizard has a high potential to occur at the project site.

**Coast Horned Lizard.** The coast horned lizard (*Phrynosoma blainvillii*), a CDFW SSC and BLM sensitive species, occurs in a wide range of habitats in California, including valley-foothill hardwood, conifer, and riparian habitats, pine-cypress, juniper, and annual grasslands. In the Antelope Valley the coast horned lizard may be found near the foothills and margins, whereas the desert horned lizard (*P. platyrhinos*) is more typical of the hotter and drier valley floor. Coast horned lizard was identified at the Manzana Wind Facility, but it is unknown whether it was identified within the Camino Solar project site. The project site provides suitable habitat for this species, and the nearest CNDDB record is approximately 6 miles to the west. The potential for coast horned lizard to occur is high.

**Desert Tortoise**. In April 2016, biologists identified suitable habitat for desert tortoise (*Gopherus agassizii*) at the project site. Non-native grasslands are not considered suitable; all other habitat types at the site are considered suitable habitat for the desert tortoise (Appendix D, Figure 7). In May 2016, a protocol-level survey was conducted of all suitable habitat at the project site, concurrently with the survey for burrowing owl burrows and the botanical survey in May 2016. No desert tortoise, burrows, or sign of desert tortoise were detected at the project site as a result of the protocol survey conducted in 2016. This result is consistent with the previous protocol surveys for desert tortoise conducted within the BLM parcel in summer 2004 and fall 2011 in support of the Tylerhorse Project, and for the Manzana Wind Facility in 2005, respectively.

Since 2004, protocol-level surveys for desert tortoise have been conducted over tens of thousands of acres in the Antelope Valley, which is located at the westernmost edge of the species' range. Very few signs of desert tortoise have been recorded as a result of these surveys. There are two CNDDB records desert tortoise within the records search area; one record is a set of burrows approximately 3 miles south of the proposed project, recorded in 2010. The second record is an observation of a live tortoise which was observed in 2006 approximately 8 miles east of the project site.

Based on the local CNDDB records and the presence of suitable habitat at the project site, the potential for desert tortoise to occur would be considered high; however, desert tortoise has not been recorded at the site after multiple years of protocol-level surveys, or during protocol surveys at adjacent projects making it not likely to occur at the project site. This is further supported by email correspondence from BLM and USFWS stating that desert tortoise is considered absent from the project site (Bransfield 2016; Appendix G of the BRTR).

### *Birds*

**Golden Eagle.** The golden eagle (*Aquila chrysaetos*) is a CDFW fully protected species, a BLM Sensitive species, a USFWS bird of conservation concern, and a DRECP Focus Species; it is also protected pursuant to the federal Bald and Golden Eagle Protection Act (BGEPA). The golden eagle is an uncommon but widespread resident in California, and is known to nest in the Tehachapi Mountains and occasionally on its southern foothills. Territories regularly span 5 to 10 miles across depending on the availability of prey, nest sites, and topography. Breeding adults in desert settings may range 10 to 20 miles from the nest while foraging. Golden eagles nest on cliffs, rock outcrops, or in large trees, none of which are present at the project property. Foraging golden eagles require large amounts of open space for hunting, such as grasslands, deserts, and savannahs. Like most of the Antelope Valley, the entire project property provides suitable forage habitat and may support a suitable prey base. Mid-sized mammals such as rabbits and marmots are preferred as prey, but prey may be as small as ground squirrels, or as large as deer (rarely), and golden eagles will consume carrion when it is available. The project property supports some small to moderate-sized mammalian prey species, including black-tailed jackrabbits (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), and California ground squirrel (*Spermophilus beecheyi*).

No golden eagles were observed incidentally by biologists at the project property, and there is no suitable habitat for nesting. Multiple years of aerial surveys for nesting golden eagles have been conducted in the region, which have identified golden eagle nests in the Tehachapi and Piute Mountains. The closest active nest to the project site is approximately 5 miles to the northeast (SWCA 2017). The closest record in the CNDDB is approximately 7.5 miles north of the proposed project. Golden eagles are regularly observed wintering in the Antelope Valley (eBird 2019). This species was observed at the Manzana Wind Facility site during raptor migration surveys. Golden eagle is considered present at the project site when foraging but lacks potential nest sites.

**Burrowing Owl.** Burrowing owl (*Athene cunicularia*), a CDFW SSC, BLM Sensitive species, and DRECP Focus Species, occurs in a wide range of mostly open habitats in California, including grasslands, shrub-steppe, deserts, pastures, and agricultural areas. Suitable habitat for burrowing owl includes short vegetation and, in the breeding season, the presence of small mammal burrows. The key characteristics of suitable habitat are moderately low and sparse vegetation, a prey base of small mammals during nesting, and burrows or similar sites for shelter. This species occurs at low densities in the Antelope Valley, where it is present in both the breeding and non-breeding seasons, as recorded in the CNDDB. CDFW considers burrows occupied within the last three years to be occupied for the purposes of documenting burrowing owls at a project and evaluating potential impacts (CDFW 2012).

A complete three-phase burrowing owl survey was completed by biologists between spring 2016 and summer 2016 throughout the entire project site. The first survey for burrows was conducted in May 2016, and follow-up visits to determine the burrows' occupancy status were conducted in June and July 2016. As a result of the survey for burrows, six burrows of suitable size were identified, only one of which was inside the project area (Appendix D, Figure 12). Two of the potential burrows were dens occupied by coyote (*Canis latrans*) or desert kit fox, which is not compatible with concurrent use by burrowing owls. One burrow, at the interior edge of the proposed project, had signs of use, including whitewash (feces), and beetle carcasses. No burrowing owls were observed at it or at any part of the proposed project during the follow-up visits in June and July, or during any survey in 2016. The burrows were therefore determined to be unoccupied in the 2016 breeding season. However, CDFW defines a burrow as occupied if it has been occupied in the past three years. The presence of sign at one burrow means that it is considered occupied by that definition. A burrowing owl survey was also conducted in 2011 in support of the Tylerhorse Project.

As a result of that survey, a single occupied burrowing owl burrow was observed approximately 0.2 miles to the east of the project site near a large ephemeral drainage. The location was revisited in May 2016 during surveys specifically to search for burrowing owls; no burrows were found in the area. Burrowing owl is considered present at the project site, although survey results indicate that densities are very low, and they may not be present on a permanent basis.

**Swainson's Hawk.** Swainson's hawk (*Buteo swainsoni*) is a DRECP Focus Species and is listed as threatened under CESA. It is known to nest in small numbers in the Antelope Valley. The local population in the Antelope Valley has been well studied, and most nest sites are known and used repeated over several years (Bloom 1980). This species forages in open habitats with little topographic relief, and in California is generally found in association with agricultural fields, where prey (small mammals such as gophers and mice) are numerous. The CNDDB includes several records of Swainson's hawk nests within 10 miles of the project site, but none within the 5-mile radius search area stipulated in the CDFW survey protocol. All of the CNDDB records are within 1.5 miles from agricultural fields. In contrast, the project site is approximately 5.25 miles from the closest agricultural field (Appendix D, Figure 8). On May 3, 2016, a windshield and pedestrian survey of potential nest sites within 5 miles of the project site was conducted. First, the biologist visited Swainson's hawk nest sites within 10 miles of the project site that are recorded in the CNDDB. The nearest known nest site in the CNDDB is approximately 7 miles from the project site. None of the previously recorded Swainson's hawk nests visited were active, and several were in disrepair. Some of the nest sites recorded in the CNDDB could not be located, although there were stumps at the sites where trees had likely been removed. Next, the biologist surveyed potential nest sites within a 5-mile-radius around the project site. In this area, all large nests potentially occupied by raptors or common raven were observed with binoculars or a spotting scope until the occupancy status and species was determined. One area near the intersection of Irone Avenue and 140th Street West included several residences; the biologist was not able to comprehensively search every tree in the area due to potential privacy concerns, but did identify two active common raven nests, suggesting that nesting Swainson's hawks were unlikely to be present. No other potential Swainson's hawk nest sites were identified during the survey. Due to the lack of potential or active Swainson's hawk nests identified during the survey, conducting multiple surveys of active nest specified in the CDFW survey protocol are not required. Migratory bird surveys conducted for the Manzana Wind Facility recorded Swainson's hawk migrating through the project site and surrounding area. No active Swainson's hawk nests were identified as a result of the nesting raptor survey throughout the Manzana Wind Facility. The potential for Swainson's hawk to nest at the project site is not likely to occur but is present during migration.

**Loggerhead Shrike.** Loggerhead shrike (*Lanius ludovicianus*) is listed as a CDFW SSC and a USFWS bird of conservation concern. This species occurs in areas with widely spaced shrubs or low trees, such as scrub lands, steppes, deserts, savannahs, prairies, agricultural lands, and sometimes suburban areas. Loggerhead shrike is a permanent resident in the Antelope Valley. The loggerhead shrike preys on large insects, lizards, small mammals, birds, and carrion. It requires open areas for hunting, shrubs or low trees for perches and nest sites. The project site includes suitable habitat for this species, and it was observed at the project site during surveys in 2016. Loggerhead shrike is considered present.

### *Mammals*

**Desert Kit Fox.** Desert kit fox (*Vulpes macrotis arsipus*) is not a federally or state-listed species and does not receive protection under the FESA. This subspecies is, however, included as a "planning species" under the DRECP. Much of the Mojave Desert provides habitat for this species, although its population status and

trends are unclear. The CNDDB does not maintain records for this species, so no location records are available for reference, although it is regularly encountered in the Antelope Valley. This is the smallest fox in North America, with an average body length of 20 inches and weight of about five pounds. Diet varies geographically, seasonally and annually, based on abundance of prey. Found in arid climates, it prefers grasslands, open desert scrub, and occasionally farmland for denning and foraging. They are nocturnal species and feed primarily on nocturnal rodent species including kangaroo rats. Additional prey items include ground squirrels, desert cottontails, mice, insects, carrion and ground-nesting birds. The desert kit fox populations rise and fall with the amount of annual rainfall: more rain means more kit foxes. Changes in precipitation patterns, including reduced rainfall and increase changes of drought, all caused by climate change, and would have an impact on the desert kit fox populations. Dens are usually located deep within a complex of burrows. At least in the western Mojave, desert kit fox dens are frequently located on west- and northwest-facing slopes on friable soils with an absence of stones, caliche, or hardpan (O'Farrell and Gilbertson 1986). Breeding typically occurs in December and January, and pups have usually left the natal den by May.

The entirety of the project site is suitable habitat for desert kit fox. Sign of this species at a potential den were recorded during the transect surveys conducted in May 2016, concurrent with the survey for desert tortoise and burrowing owl. Three potential dens were identified within and adjacent to the project area; all were visited multiple times during the follow-up visits to potential burrowing owl burrows because burrowing owls often use burrows abandoned by other species (Appendix D, Figure 12). The follow-up visits were conducted on June 8, June 30, and July 15, 2016. Two of the three dens were unoccupied, and there were no signs of recent use. The third den, located at the northern edge of the Manzana Wind facility substation, had signs of active use, including tracks and copious fresh scat when it was first encountered by biologists. There was less sign present on June 8, and none on June 30 and July 15. As of June 30, onsite staff for the Manzana Wind facility reported that fox activity had shifted to the east of the O&M facility; no den site was known. This is consistent with use of the first den for breeding. The active den is less than 500 feet from the Manzana Wind facility O&M facility and project roads which are used on a daily basis by Manzana Wind facility staff. Kit fox is considered present on the project site.

**Tehachapi Pocket Mouse.** The Tehachapi pocket mouse (*Perognathus alticolus inexpectatus*) is a CDFW SSC. This species occurs in native and non-native grasslands, Joshua tree woodland, pinyon-juniper woodland, yellow pine woodland, oak savannah, chaparral, coastal sage communities, rangeland, and fallow grain fields. Tehachapi pocket mouse constructs burrows in loose sandy soil. Its ecology is poorly known, but it is most likely a granivore like other pocket mice. It is known from relatively few locations, but these occurrences span a wide array of habitat types. The Tehachapi pocket mouse has been recorded at elevations between 3,500 and 6,000 feet amsl. The closest record of this species in the CNDDB is approximately 2.7 miles west of the project site. The potential for Tehachapi pocket mouse to occur at the project site is high.

**San Joaquin Pocket Mouse.** The San Joaquin pocket mouse (*Perognathus inornatus*), a BLM Sensitive species, ranges from the southern Sacramento Valley, Salinas Valley, San Joaquin Valley and adjacent foothills, south to the Mojave Desert. It is associated with fine-textured, sandy, friable soils, and is known to occur in grassland, oak savanna, and arid scrublands at elevations from 1,100 to 2,000 feet amsl. The closest CNDDB record of this species is 1 mile to the south of the proposed project, which represents a capture made during studies conducted in support of the Tylerhorse Project. The potential for San Joaquin pocket mouse to occur at the project site is high.

**American Badger.** American badger (*Taxidea taxus*), a CDFW SSC, is generally found in open areas, including open woodlands, desert scrub, and grasslands. Agricultural fields are also suitable if there is a small mammal prey base. The entirety of the project site constitutes potential habitat for this species, which is widespread but uncommon throughout North America. Badger dens are distinctive, due to their size and the presence of claw marks on the sides created when the den was dug. No potential dens were observed at the project site during the surveys conducted in 2016; however, one American badger was observed at the Manzana Wind facility site during biological surveys conducted between 2004 and 2006. The potential for American badger to occur at the project site is high.

**Tulare Grasshopper Mouse and Southern Grasshopper Mouse.** The project site lies approximately at the junction of the ranges of these two closely related mice, which cannot be distinguished in the field. The range of the Tulare grasshopper mouse (*Onychomys torridus tularensis*) extends north from the proposed project, and this subspecies is generally considered to occur only in the southern San Joaquin Valley, although there are a few recorded occurrences along the eastern edge of the Tehachapi and Southern Sierra Mountains. The southern grasshopper mouse occurs south of the proposed project to at least the California-Mexico border. Both are CDFW SSC, and the Tulare grasshopper mouse is a BLM Sensitive species. Both species are highly active carnivores and depend on high densities of insect prey.

The Tulare grasshopper mouse occurs in low open scrub and semi-scrub habitats such as alkali desert scrub and desert scrub, and has also been recorded in blue oak savannah. Small mammal trapping conducted in support of the Tylerhorse Project resulted in the identification of southern grasshopper mouse at the project site, but these captures were recorded in the CNDDB as Tulare grasshopper mouse, possibly due to the presumed range of the species and the fact that it would not have been possible to identify the captured individuals as Tulare versus southern grasshopper mice in the field setting. These records are approximately 1.2 miles to the east of the project site and represent the southernmost known occurrences of this species. The next closest CNDDB record of Tulare grasshopper mouse is approximately 12 miles northeast of the project site.

The southern grasshopper mouse occurs in desert areas, especially scrub habitats with friable soils for digging, and prefers low to moderate shrub cover. The closest record in the CNDDB is approximately 29 miles south of the project site, which is one of the two northernmost records of this species.

The location of the project site at the edge of these species' ranges means that both were considered to have the potential to occur, although the proximity of records of Tulare grasshopper mouse suggest that this species is more likely to be present than the southern grasshopper mouse. The potential of Tulare grasshopper mouse to occur at the project site is high; the potential for southern grasshopper mouse to occur is moderate.

## Sensitive Natural Communities

Sensitive habitats and vegetation communities are those that are considered rare in the region, support special-status plant or animal species, or receive regulatory protection, including those that are of special concern to resource agencies or are afforded specific consideration through CEQA. In addition, vegetation communities listed by CDFW as having the highest inventory priorities are considered sensitive.

**Joshua Tree Woodland.** Joshua tree woodland is considered a sensitive natural community by CDFW and all impacts to this sensitive natural community will be avoided to the maximum extent practicable except for minor incursions as specified in the DRECP, in CMA LUPA-BIO-SVF-5. Approximately 2 acres of

Joshua trees woodland are located within the gen-tie corridor of the project site; however, less than 1 acre of the woodland would be impacted.

**Scale Broom Scrub.** Scale broom scrub has a state rarity rank of S3, making it a CDFW sensitive natural community. Scale Broom Scrub, a subset of the Native Vegetation Community (NVC) macrogroup Madrean Warm Semi-Desert Wash Woodland/Scrub, does not occur at the proposed project, but was mapped bordering the eastern edge of the project site during surveys in 2004, 2005, and 2011. This sensitive natural community has a 200-foot setback specified in the DRECP, in CMA LUPA-BIO-RIPWET-1 and "will be avoided to the maximum extent practicable, except for allowable minor incursions." Scale broom scrub was not found within the project site, as the project footprint was designed to avoid direct impacts to this sensitive natural community; however, it is discussed because the setback intersects with the project site.

## Critical Habitat

USFWS has not designated or proposed 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 8 miles to the west, and desert tortoise critical habitat is approximately 28 miles to the southeast of the project site. Mojavean creosote bush scrub is considered a primary constituent element (PCE) for desert tortoise. Although this community is present on the project site, the site and surrounding vicinity has not been designated as critical habitat. Moreover, it has been determined that desert tortoise is absent from the project site (Bransfield 2016).

## Wildlife Movement Corridors

The habitat types in the project area are dominated by low vegetation, grasslands, and widely spaced shrubs, which do not pose a physical barrier to the movements of most wildlife species. The BLM parcel is surrounded by a barbed wire fence to contain grazing livestock, which would limit the movements of large ungulates such as pronghorn (*Antilocapra americana*), should they be present. Pronghorn were historically present by the thousands seasonally, but were mostly extirpated by the late 1880s and were locally extinct by the 1940s. Pronghorn have been reintroduced to the Central Valley, and as that population has expanded, the species has become a rare visitor to the northern foothills of the Tehachapi Mountains.

There is little topographic relief within the project site that would serve to funnel or direct wildlife movement into any particular areas or in specific directions. The entire project site slopes gently southward with a 5 to 10 percent gradient. There are very small drainages that flow toward the project site, but they flatten out and become indistinct; they do not pass through the project site, and so do not form a potential corridor. The large wash that runs north-south to the east of the proposed project is the nearest feature that is likely to support wildlife movement and dispersal. Around the proposed project, scattered washes run generally northwest to southeast, but there is no riparian vegetation to support concentrations of wildlife; all habitats within the project site are xeric and similar to those in the surrounding areas. The washes are landscape features that are the most likely to represent wildlife movement corridors locally; however, there is no evidence that they provide avenues for concentrations of wildlife. No known or identified wildlife corridors exist within the project site, nor has any part of the project site been identified as a wildlife connectivity area as mapped by the California Essential Habitat Connectivity Project (Spencer et al. 2010).

In the larger context, the project site lies near the center of the Antelope Valley, which is relatively flat and has few deep drainages or other well-defined corridor-like topographic features that channel wildlife movements into specific corridors. Instead, 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 wind energy projects in the vicinity of the project, as well as the areas to the south, 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 U.S. Army Corps of Engineers (USACE), CDFW, and/or Regional Water Quality Control Board (RWQCB). The definitions of the extent of regulatory agency jurisdictions are described in the Regulatory Setting below (Subsection 4.4.4).

Four linear drainages potentially subject to the jurisdiction of CDFW and the RWQCB were delineated during site surveys at the BLM-administered parcel where the proposed project is located; no potential wetlands or riparian habitats were identified (Appendix D, Figure 10). None of the vegetation alliances or features mapped at the project site match the riparian or wetland habitats or features described in the DRECP (Appendix D, Table 2).

The results of the delineation were taken into consideration for project design, and all of the potentially jurisdictional features were avoided. A desktop review confirmed that the portions of the project site on privately owned lands also avoid potentially jurisdictional features. No potential wetlands were identified as a result of the delineation. The project has been designed to avoid these drainages, as well as their upstream and downstream portions.

No waters potentially subject to the jurisdiction of the USACE pursuant to Section 404 of the Clean Water Act were identified at the project site as a result of the Jurisdictional delineation. USACE has issued a determination of non-jurisdiction for the entire Antelope Valley watershed, including the project site, on the basis that it is a closed basin that functions as an isolated intrastate watershed system which lacks the presence of traditional navigable waters (USACE 2013). The dry lakes that form the terminal basin of the watershed do not have surface waters that are used for industrial or other commercial purposes by interstate commerce industries, which are activities that could trigger USACE jurisdiction for isolated waters. Lake Palmdale and its tributaries, approximately 30 miles from the project site, are excluded from that determination.

CDFW exercises jurisdiction over wetlands and riparian resources associated with rivers, streams, lakes, ephemeral streams, desert washes and other watercourses that demonstrate surface or subsurface flows under Sections 1600 *et seq.* of the California Fish and Game Code (CFGC). CDFW has the authority to regulate projects that would substantially divert, obstruct, or change the natural flow of a river, stream, lake, or ephemeral drainage; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. CDFW's jurisdiction along a river, stream, creek, ephemeral drainage, or other water body is usually bounded by the top-of-bank or the outermost edges of riparian vegetation.

# 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 California Code of Regulations (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 Migratory Bird Treaty Act (MBTA), first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (U.S. Code Title 16, Section 703). The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

## Bald and Golden Eagle Protection Act of 1940 (USC, Title 16, Section 668, enacted by 54 State. 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 RWQCB administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. USACE implementing regulations are found at CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the U.S. Environmental Protection Agency (USEPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

## Desert Renewable Energy Conservation Plan (DRECP)

In response to Executive Order S-14-08, which established a target of obtaining 33 percent of the state's electricity from renewable resources by 2020, the California Energy Commission (CEC, CDFW, BLM and USFWS, have started preparing the Desert Renewable Energy Conservation Plan (DRECP). The plan area encompasses the Mojave and Colorado Desert regions in California, including all or a portion of the following counties: Kern, Los Angeles, San Bernardino, Inyo, Riverside, Imperial, and San Diego.

The DRECP is a landscape-level plan that was intended to streamline renewable energy permitting and development while conserving unique and valuable desert ecosystems and providing outdoor recreation opportunities. The DRECP is a joint state and federal Natural Communities Conservation Plan (NCCP) and part of one or more HCP that are intended to provide for effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects. It is anticipated to provide long-term endangered species permit assurances to renewable energy developers and provide a process for conservation funding to implement the DRECP. It would also serve as the basis for one or more HCP under the ESA.

On September 14, 2016, the BLM issued a Record of Decision, approving a Land Use Plan Amendment, which represents the conclusion of Phase I of the DRECP, which identifies priority areas for renewable energy development while setting aside millions of acres for conservation and outdoor recreation. The BLM plan compliments the non-federal land component of the DRECP (Phase II), which is ongoing, led by the California Energy Commission.

# 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 CFGC Section 2080.1. For projects that would result in take of a species listed under the CESA only, the project proponent would have to apply for a take permit under Section 2081(b).

## Regional Water Quality Control Board

Under 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 regulates waters of the state under the Porter-Cologne Act Water Quality Control Act. The RWQCB requires projects to avoid impacts to wetlands if feasible and requires that projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the state, which may include waters deemed ‘isolated’ or not subject to Section 404 jurisdiction, under the Solid Waste Agency of Northern Cook County (SWANCC) legal decision. The thrust of the SWANCC legal decision is that isolated, non-navigable, and intrastate waters are not “waters of the United States” subject to USACE jurisdiction under the Clean Water Act. Filling, dredging, or excavation of isolated waters may constitute a discharge of waste to waters of the state and if so, then prospective dischargers are required to file a Report of Waste Discharge to obtain Waste Water Discharge Requirements as authorization for that fill or waiver thereof from the RWQCB.

## Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the CWA.

## California Fish and Game Code (CFGC)

**Section 460.** Under this section of the CFGC, desert kit fox may not be taken at any time.

**Sections 1600 through 1616.** Under these sections of the CFGC, the project proponent is required to notify CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events.

Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

**Sections 2080 and 2081.** Section 2080 of the CFGC 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 [NPPA], 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 CFGC, the project proponent is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds of prey or their nests or eggs; the taking or possessing of any migratory nongame bird as designated in the MBTA; the taking, possessing, or needlessly destroying of the nest or eggs of any bird; or the taking of any nongame bird pursuant to California Fish and Game Code Section 3800.

**Sections 3511, 4700, 5050, and 5515.** Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the CFGC. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species.

**Sections 4000 through 4003.** Under Section 4000 of the CFGC, it is unlawful to conduct activities that would result in the taking, possessing, or destroying of any fur-bearing mammals, including kit foxes, without prior authorization from the CDFW.

### CEQA Guidelines, Section 15380

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 CNDDB 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 ten 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 Plant Protection Act affords protection to certain native desert plant species, including all species of the agave family (*Agavaceae*), the cactus family (*Cactaceae*), 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.

# Regional

## Desert Renewable Energy Conservation Plan

The DRECP is a landscape-level plan that streamlines renewable energy development while conserving unique and valuable desert ecosystems and providing outdoor recreation opportunities. The DRECP plan area encompasses 22.5 million acres in the desert regions and adjacent lands of seven California counties: Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino and San Diego. The DRECP is a collaborative effort between the CEC, CDFW, BLM, and USFWS (DRECP 2017b).

The BLM signed the Record of Decision approving its Land Use Plan Amendment on September 14, 2016, completing Phase I of the DRECP. The BLM Plan Amendment covers the 10 million acres of BLM-managed lands in the DRECP plan area and supports the overall renewable energy and conservation goals of the DRECP. Phase II of the DRECP would apply to private lands and focuses on better aligning local, state, and federal renewable energy development and conservation plans, policies, and goals. It includes building off of the Renewable Energy Conservation Planning Grants (RECPG) that were awarded by the CEC to counties in the plan area (DRECP 2019b). The project site is in a Development Focus Area for the DRECP.

# Local

## Kern County General Plan

The Kern County General Plan identifies the federal, state, and local statutes, ordinances, and policies that govern the conservation of biological resources that must be considered by Kern County during the decision making process for any project that could affect biological resources.

The Land Use, Open Space, and Conservation Element of the Kern County General Plan states that the element provides for a variety of land uses for future economic growth while also ensuring the conservation of the County's agricultural, natural, and resources attributes. Section 1.10, General Provisions, provides goals, policies, and implementation measures that apply to all types of discretionary projects.

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

#### 1.10 General Provisions

#### 1.10.5 Threatened and Endangered Species

***Goal***

Goal 1: Ensure that the County can accommodate anticipated future growth and development while a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

***Policies***

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and Federal laws.

Policy 28: The County should work closely with State and Federal agencies to assure that discretionary projects avoid or minimize impacts on fish, wildlife, and botanical resources.

Policy 29: The County will seek cooperative efforts with local, State, and Federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

Policy 31: Under the provisions of CEQA, the County, as lead agency, will solicit comments from the CDFW and the USFWS when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.

Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

***Implementation Measures***

Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.

Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.

Measure S: Pursue the development and implementation of conservation programs with State and federal wildlife agencies for property owners desiring streamlined endangered species mitigation programs.

## *Chapter 5. Energy Element*

### 5.2 Importance of Energy to Kern County

***Policy***

Policy 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.

## *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 a general biological resource assessment. Biological resources evaluated included 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 CNDDB, 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 December 2015, spring and summer 2016, and spring 2018. The project site was surveyed for desert tortoise in 2006, 2011, and 2013 in support of the Manzana and Tylerhorse projects. Additional protocol desert tortoise surveys that followed USFWS desert tortoise protocol were conducted in 2016 (USFWS 1992; USFWS 2010). The impact analyses presented here address potential biological resources located on the project site based on results of field surveys detailed in Appendix D of this EIR/EA

## 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 CDFW or the USFWS;
b. Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or the USFWS;
c. Has a substantial adverse effect on 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?

These criteria are applicable to only the Kern County CEQA EIR analysis and are not applicable to the BLM NEPA EA analysis discussed in Chapter 11. In addition, significance determinations identified for the criteria above are applicable to only the Kern County CEQA EIR analysis and are not applicable to the BLM NEPA EA analysis.

# Project Impacts

**Impact 4.4-1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.**

## 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*

Special-status plants that have a low potential to occur include Robbins' nemacladus, short-bracted bird's-beak, Mt. Pinos larkspur, Latimer's woodland-gilia, Lemmon's syntrichopappus, Mojave spineflower, Clokey's cryptantha, and Tejon poppy. Direct impacts to these plants may include mortality of individuals as a result of permanent removal or damage to root structures during the construction phase of the proposed project through clearing of vegetation. 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, water uptake processes as a result of sedimentation around individual plants. These potential impacts could be mitigated to a less than significant level through implementation of avoidance and minimization measures, and permitting for special-status plants, if necessary, per Mitigation Measure MM 4.4-2. Because of the low potential of occurrence, no mitigation beyond Mitigation Measure MM 4.4-2 is required for potential impacts to Mojave spineflower, Clokey's cryptantha, and Tejon poppy.

With implementation of Mitigation Measures MM 4.4-2, impacts to special-status plant species would be less than significant.

### *Regulated Native Plant Species*

Joshua trees and two species of cactus, silver cholla and beavertail cactus are not considered special status but are regulated native plants and have been documented within the project site. Impacts to Joshua trees, silver cholla, and beavertail cactus would be considered less than significant with mitigation. There are high density areas of Joshua trees, particularly at the eastern edge of the project. Altogether, approximately 750 Joshua trees and 54 cacti were identified within the project area. Impacts would be mitigated to a level of less than significant through the implementation of the Joshua Tree Impact Plan described in Mitigation Measure MM 4.4-2, the Joshua tree mitigation program described in Mitigation Measure MM 4.4-3, and the required fee for regulated native plants removal described in Mitigation Measure 4.4-3. This plan would include methods to restore temporarily disturbed areas to its previous habitat type, along with success criteria for each habitat type and a monitoring plan to measure progress toward success criteria.

### *Special-Status Wildlife*

Special-status wildlife species confirmed present for the project site include golden eagle, burrowing owl, loggerhead shrike, Swainson's hawk, and desert kit fox. Coast horned lizard, northern California legless lizard, Tulare grasshopper mouse, Tehachapi pocket mouse, San Joaquin pocket mouse, and American badger have a high potential to occur at the project site. One special-status species that has a moderate potential to occur is the Southern grasshopper mouse. Golden eagle and California condor are both residents in the project vicinity, but no suitable nesting habitat is present on the project site, and thus no significant impacts to these species would occur. Suitable habitat for several migratory birds and raptors protected under the MBTA and the CFGC are also present. Construction of the proposed 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.

**Golden Eagle and California Condor.** Golden eagle and California condor both typically fly at altitudes much higher than project infrastructure while foraging or traveling, and collision with the project is therefore extremely unlikely. The project has not been documented as a nesting or roosting site for California condors. Onsite habitat characteristics and potential food sources indicate that the project site is potentially suitable for condor foraging; however, condor activity in proximity to the project area has historically been very low, and no condors have ever been observed foraging or feeding in the project site. Although condors can fly over a variety of terrain, the majority of condor flights follow mountains and foothills, where they use topography and associated orographic lift (ascending airflow caused by rising terrain) and thermal updrafts to generate lift (Snyder and Snyder 2000) Condors have been found to fly at higher elevations over flatter, smoother terrain with relatively low vegetation cover and at lower elevations over rougher, steeper terrain with dense vegetation cover (Poessel et al. 2018). Condors may fly over the project site on occasion, but are not expected to fly at altitudes that would result in an interaction with the

proposed project. In addition, there has been no documented fatalities or injuries of condors at solar projects, including the existing 115 MW of solar within 3 miles of the project.

Golden eagles are known to nest within approximately 5 miles of the project site, which is within the potential foraging range for breeding adults. Golden eagles are also known to winter in the Antelope Valley. Implementation of the proposed project would result in loss of some foraging habitat for golden eagle The project site represents only a fraction of the home range of either golden eagle or California condor species. The project area represents less than 1 percent of a 5-mile-radius circle, which is the distance to the closest known golden eagle nest site. California condors range even larger distances, up to 150 miles from the project site. In addition, there have been no documented fatalities or injuries of golden eagles at solar projects, including the existing 115 MW of solar within 3 miles from the project. Impacts to these species' foraging habitats are expected to be negligible., If found to be present during construction activities, the project would have the potential to directly impact these listed species through mortality or injury, if not able to fly out of harm's way.

Potential impacts to either species would be avoided or minimized through impact minimization measures described in Mitigation Measures MM 4.4-1 and MM 4.4-6, which includes monitoring and worker training. With implementation of these mitigation measures, impacts to golden eagle and California condor would be less than significant.

**Burrowing Owl.** Burrowing owl sign was observed at a burrow within 500 feet of the project site during 2016 surveys and one burrowing owl was present during 2011 surveys conducted for the formerly proposed Tylerhorse Project. It is therefore assumed burrowing owl are present on the project site during their nesting period. Direct impacts to the burrowing owl 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 less than significant with implementation of mitigation measures under CEQA. Implementation of Mitigation Measures MM 4.4-1, MM 4.4-6 through MM 4.4-8, and MM 4.7-4, which include worker training, biological monitoring, BMPs to reduce erosion into burrows, and pre-construction wildlife surveys to identify any active or potential burrows that may require avoidance, would reduce the potential impacts. Mitigation Measure MM 4.9-2 requires that if herbicides are needed during vegetation clearance and grading, that only non-toxic herbicides that are approved for use in California, and are appropriate for application adjacent to natural vegetation areas (i.e. non-agricultural use) should only be used to eliminate vegetation if burrows, dens or nests are located near vegetation clearance and grading areas. Implementing these mitigation measures would ensure that no nesting or foraging burrowing owls are impacted during grading and construction. Therefore, impacts to burrowing owl would be less than significant.

**Swainson's Hawk.** Suitable foraging habitat for Swainson's hawk includes open desert scrub communities similar to those that occur on the project site, however, the habitat is considered low quality. The availability of suitable foraging habitat on the project site for this species would be reduced or lost as a result of vegetation removal prior to grading and construction activities. This species was observed in the area during the migratory period and could use the site for foraging. 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. Even though there are suitable nest structures and trees for Swainson's hawks to nest in, there has been no documentation or

observations of Swainson's hawk nesting on the project site and nesting survey results were negative. This species was determined to be unlikely to nest due to the project's location more than 5 miles from the nearest active agricultural fields, which are preferred foraging areas during the nesting season. Any potential impacts would be avoided through impact minimization measures, including preconstruction surveys to determine presence and avoidance to reduce potential impacts to the species per Mitigation Measure MM 4.4-7. Mitigation Measure MM 4.4-9 would require avian nesting surveys that would detect any nesting Swainson's hawk within the project vicinity. Potential impacts would be further reduced through implementation of Mitigation Measures MM 4.4-1 and MM 4.4.-6 which include monitoring and worker training. With implementation of these mitigation measures, impacts to Swainson's hawk would be less than significant.

**Loggerhead Shrike.** The project site contains suitable nesting and foraging habitat for loggerhead shrike. Direct impacts to loggerhead shrike and its habitat could occur as a result of project construction from removal of vegetation that provides suitable habitat for these species during the nesting season of February through August. Implementation of Mitigation Measures MM 4.4-1, MM 4.4-6, and MM 4.4-9 would reduce any potential impact to this species to a less than significant level through monitoring, worker training, and pre-construction surveys and nest avoidance.

**Desert Kit Fox.** Desert kit fox sign was observed adjacent to the project site and unoccupied burrows were observed within the project area; therefore, desert kit fox was determined to be present on the project site. Direct impacts to the species and its habitat could include collision with vehicles on access roads or the loss of available habitat and potential burrows due to construction activities and increased human presence. These types of potential impacts to this species would be considered significant. Potential impacts would be avoided through impact minimization measures including preconstruction surveys to determine presence and avoidance or relocation to reduce potential impacts to the species per Mitigation Measure MM 4.4-7. Potential impacts would be further reduced through implementation of Mitigation Measures MM 4.4-1, MM 4.4-6, and MM 4.9-2, which include monitoring, worker training, and use of only non-toxic herbicides to eliminate vegetation if burrows, dens or nests are located near vegetation clearance and grading areas. With implementation of these mitigation measures, impacts to desert kit fox would be less than significant.

**Migratory Birds.** Project-related direct impacts on nesting birds during construction could include crushing of or vehicle collisions with nesting birds and/or destruction of nests and eggs during vegetation clearing and grading with heavy machinery. Potential indirect impacts include interference with reproductive success and nest abandonment in adjacent areas from increased human presence and increased noise levels (and vibration) from project construction. Reproductive and nest impact could occur if construction occurs during the breeding season, which is generally considered to be February 1 through August 31 in the Mojave Desert. Impacts to these species would be considered significant. To reduce potentially significant impacts to nesting birds, Mitigation Measure MM 4.4-9 requires implementation of preconstruction clearance surveys as well as avoidance and minimization measures. Mitigation Measure MM 4.9-2 use of only non-toxic herbicides to eliminate vegetation if burrows, dens or nests are located near vegetation clearance and grading areas. Impacts to nesting or foraging birds would be less than significant during construction.

**Coast Horned Lizard and Northern California Legless Lizard.** Direct impacts to these species, if present, could include collision with vehicles on access roads; mechanical crushing during site preparation, grading of new access roads, and preparation of staging locations; and general disturbance due to increased human activity. Furthermore, project implementation may result in permanent loss of habitat due to permanent structures or roads, and temporary loss of habitat from construction activities. These types of

potential impacts to these species would be considered significant. Potential impacts would be avoided through impact minimization measures, including preconstruction surveys to determine presence and avoidance or relocation to reduce potential impacts to the species per Mitigation Measure MM 4.4-7. Potential impacts would be further reduced through implementation of Mitigation Measures MM 4.4-1 and MM 4.4-6, which include monitoring and worker training. With implementation of these mitigation measures, impacts to coast horned lizard and northern California legless lizard would be less than significant.

**Tulare Grasshopper Mouse, Tehachapi Pocket Mouse, and San Joaquin Pocket Mouse.** Direct impacts to these species, if present, could include collision with vehicles on access roads; mechanical crushing during site preparation, grading of new access roads, and preparation of staging locations; and general disturbance due to increased human activity. Furthermore, project implementation may result in permanent loss of habitat due to permanent structures or roads, and temporary loss of habitat from construction activities. Potential impacts would be avoided through impact minimization measures including preconstruction surveys to determine presence and avoidance or relocation to reduce potential impacts to the species per Mitigation Measure MM 4.4-7. Potential impacts would be further reduced through implementation of Mitigation Measures MM 4.4-1 and MM 4.4-6. which include monitoring and worker training. With implementation of these mitigation measures, impacts to Tulare grasshopper mouse, Tehachapi pocket mouse, and San Joaquin pocket mouse would be less than significant.

**American Badger.** 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. Indirect effects due to displacement of this species could also occur as a result of construction activities associated with the proposed project. These types of potential impacts to this species would be considered significant. Potential impacts would be avoided through impact minimization measures including preconstruction surveys to determine presence and avoidance or relocation to reduce potential impacts to the species per Mitigation Measure MM 4.4-7. Potential impacts would be further reduced through implementation of Mitigation Measures MM 4.4-1, MM 4.4-6, and MM 4.9-2, which include monitoring, worker training, and use of only non-toxic herbicides to eliminate vegetation if burrows, dens or nests are located near vegetation clearance and grading areas. With implementation of these mitigation measures, impacts to American badger would be less than significant.

**Crotch Bumble Bee and Comstock's Blue Butterfly.** Project construction activities such as vegetation clearing can have permanent direct impacts such as loss of potential food sources and to individual eggs, larvae, and pupal stages of the crotch bumble bee and Comstock's blue butterfly, if present. These types of potential impacts to these species would not be considered significant. Individual adults of both species are mobile and can move away from the project site during construction, if present. Implementation of the proposed project is not expected to have a substantial impact on either of these species.

**Southern Grasshopper Mouse.** Direct impacts to this species, if present, could include being hit by vehicles on access roads; mechanical crushing during site preparation, grading of new access roads, and preparation of staging locations; and general disturbance due to increased human activity. Furthermore, project implementation may result in permanent loss of habitat due to permanent structures or roads, and temporary loss of habitat from construction activities. These types of potential impacts to this species would be considered significant. Potential impacts would be avoided through impact minimization measures including preconstruction surveys to determine presence and avoidance or relocation to reduce potential impacts to the species per Mitigation Measure MM 4.4-7. Potential impacts would be further reduced through implementation of Mitigation Measures MM 4.4-1 and MM 4.4-6, which include monitoring and

worker training. With the implementation of these mitigation measures, impacts to southern grasshopper mouse 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 project implementation would remove habitat for special-status species on the project site, which would restrict sensitive wildlife species movement into the project site. However, impacts to all these species would be minimized through worker training, speed limits, trash pickup, and restrictions on herbicides use. Mitigation Measures MM 4.4-1, MM 4.4-6, and MM 4.4-10 require methods designed to reduce wildlife mortality and impacts, promote long-term project site suitability, educate onsite personnel, and implementation of a Raven Management Plan. 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 4.1-4, which requires compliance with Kern County's Dark Skies Ordinance to minimize nighttime lighting in unincorporated areas of Kern County. Compliance with this measure to minimize nighttime lighting would reduce indirect impacts to wildlife to a less than significant level.

**Golden Eagle, California Condor, and Swainson's Hawk.** Potential indirect impacts to foraging raptor species from the operations and maintenance phase of the project may occur through "stranding" if the species lands within the site fencing. 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 be able to use the solar panels, perimeter fencing, and utility structures surrounding the facilities as perch sites for hunting. The project area represents less than 1 percent of a 5-mile-radius circle of a golden eagle's approximate foraging range, which is the distance to the closest known golden eagle nest site. California condors forage even larger distances, up to 150 miles per day. Therefore, with development of the project site, 99 percent of the foraging habitat for these species would remain, and impacts would be less than significant. It is not expected that Swainson's hawk would use the project site for foraging during operations due to the absence of agricultural fields and known nesting sites at a distance of 5 miles of the project site (CDFW 1994). Therefore, impacts would be less than significant due to the low potential for Swainson's hawk to occur on site. 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 fencing, array structures, and heavy equipment. Collisions with transmission lines would not occur due to the transmission lines for this project being buried underground. 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.

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 4.4-9. 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. However, Mitigation Measures MM 4.4-1, 4.4-6 through 4.4-9 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

**MM 4.4-1:** Prior to the issuance of grading or building permits 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 proposed project. The following measures pertain to qualified biologists on site:

1. 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.
2. 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.
3. 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.
4. Contact information for the qualified biologist(s) shall be submitted to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM).
5. 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 4.4-2:** If during grading, construction, and decommissioning, an authorized biologist determines the presence of Robbins' nemacladus, short-bracted bird's-beak, Mt. Pinos larkspur, Latimer's woodland-gilia, Lemmon's syntrichopappus, Mojave spineflower, Clokey's cryptantha, and/or Tejon poppy onsite:

1. Sturdy, highly visible, orange plastic construction fencing (or equivalent material verified by the authorized biologist) shall be installed around all locations of detected special-status plants to protect from impacts during the construction phase, until they can be relocated. The fence shall be securely staked and installed in a durable manner that would be reasonably expected to withstand wind and weather events and last at least through the construction period. Fencing shall be removed upon completion of the project construction.
2. If any plants which are either listed as DRECP focus species or Bureau of Land Management (BLM) special status species are found on the project area, a setback of 0.25 mile from project infrastructure will be implemented. With BLM approval, a lesser setback may be implemented.
3. Any Robbins' nemacladus, short-bracted bird's-beak, Mt. Pinos larkspur, Latimer's woodland-gilia, Lemmon's syntrichopappus, Mojave spineflower, Clokey's cryptantha, and/or Tejon poppy onsite populations that cannot feasibly be avoided in final project design shall have seed collected prior to construction for sowing into suitable onsite habitat or in nearby suitable offsite habitat covered with a conservation easement. A seed harvesting and storage plan including a planting plan shall be prepared and approved by the County and BLM, prior to ground disturbance of these areas.

**MM 4.4-3**: Prior to the issuance of a grading permit, the project proponent/operator shall develop a Joshua Tree Impact Plan. The Plan shall be prepared by a qualified biologist pre-approved by the County and shall be approved by the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM) prior to implementation. At a minimum, the plan shall include the following:

1. Indicate how reasonable efforts will be made to avoid Joshua trees within project site. All Joshua trees not designated for removal and Joshua trees present immediately adjacent to construction work areas shall be protected through clear delineation and marking of construction work areas.
2. Indicate the number of trees that would be impacted, including a discussion of Joshua tree population age, health, and number of Joshua trees that could be relocated within suitable adjacent areas.
3. Methods shall be specified for avoiding specific Joshua trees and suitable candidates for translocation identified. Detail methods of relocation efforts including the preservation of the tree root ball, how it will be removed (preferably a tree spade). Success of relocated trees shall be a minimum of 90 percent after three years. The Plan shall identify the appropriate time of year for transplanting Joshua trees, and shall consider the plant's original and transplanted physical orientation, prevailing wind direction, soil type of the original and transplanted locations, and other related attributes which may affect the successful transplantation of the Joshua trees. In-lieu

fee monetary funding may be applied for any tree not meeting the 90 percent success rate.

4. Detail of a three-year maintenance program for any planned relocated Joshua trees on the site, such as weed maintenance, supplemental irrigation, and support stakes.
5. Post-Monitoring of all translocated Joshua trees, if any, shall be required for a minimum of three-years following relocation to verify the trees have adapted and are in good health. The Plan shall identify contingency measures if a tree or group of trees die, such as replanting and continued monitoring, or an in-lieu payment.
6. The plan shall specify that a qualified biologist or biological monitor shall monitor construction and all Joshua trees removed or damaged. A monitoring report shall be submitted to the Kern County Planning and Natural Resource Department and BLM to document the condition of the Joshua trees annually for three-years if any Joshua trees are relocated.

**MM 4.4-4:** Prior to issuance of grading permits, and in lieu of relocation of Joshua Trees to be impacted by the project on private land, as described above in MM 4.4-3:

1. The project proponent/operator may mitigate all or part of the project's impacts to Joshua trees by funding the acquisition and management in perpetuity of Joshua tree woodland, or habitats similar to those that contain impacted Joshua trees on site that are located within the same bioregion and/or watershed, as approved by the County.
2. Funding and management shall be provided through a County approved Conservation Plan, either through an existing mitigation bank (e.g., as managed by the City of Lancaster Parks, Recreation and Parks Department) or through a third-party entity such as the Wildlife Conservation Board or a regional Land Trust. The in-lieu fee shall provide sufficient funds to acquire appropriate lands to provide habitats containing Joshua trees at a 1:1 ratio for impacted lands. The lands should be comparable to the habitat to being impacted by the project based on similar abundance and size of Joshua trees, similar co-dominant vegetation, suitable soils and hydrology, and similar levels of disturbance or habitat degradation (or lack thereof). The County-approved biologist shall submit confirmation of the total area and an estimate of the number of individual Joshua trees that will be removed.

**MM 4.4-5:** Prior to the issuance of grading or building permits, and for the duration of construction activities, the project proponent shall demonstrate that it has in place a Construction Worker Environmental Awareness Training and Education Program for all new construction workers at the project site, laydown area and/or transmission routes.

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. All construction workers shall attend the Program at least within a minimum of one week of initial ground disturbance and one week prior to participating in construction activities and shall attend a refresher Program annually. Therefore, employees will be subject to the following:

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). The training may be presented in video form. Program shall include the components described below.

1. Information on the identification and life history of the burrowing owl, golden eagle, California condor, Swainson's hawk, 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. Identification and information regarding regulated native plants such as Joshua tree shall also be provided to construction personnel.
2. 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.
3. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education Program and signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM).
4. A copy of the training transcript, training video or informational binder for specific procedures (including such information as trenching protection for kit fox requirements) shall be kept available for all personnel to review and be familiar with as necessary.
5. 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.

**MM 4.4-6:** During construction, operations and maintenance, and decommissioning, the project proponent/operator shall implement the general avoidance and protective measures described below:

1. No more than 14 days 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 survey the area, and immediately prior to conducting these activities to ensure that no special-status animals

are present. A qualified biologist or biological monitor shall monitor all initial construction and decommissioning ground-disturbance activities. A report of those activities shall be submitted to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM) within 30 days of completion of activities.

2. Based on the results of pre-construction surveys, if any evidence of occupation of the project site by listed or other special-status animal species is observed, a no-disturbance buffer shall be established by a qualified biologist that results in sufficient avoidance, as described below. If sufficient avoidance cannot be established or if special-status animal species are found, construction shall cease in the vicinity of the animal, and the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife, as appropriate depending on the species, shall be contacted for further guidance and consultation on additional measures required.
3. 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 natural resources (i.e., special-status animal species, jurisdictional drainages, nesting birds, etc.) where possible. Construction-related activities, and decommissioning-related activities, outside of the impact zone shall be avoided. All site plans shall delineate proposed impact areas, including solar fields, generation-tie line, staging area and access routes.
4. Access roads that are planned for use during construction or decommissioning 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.
5. If exclusion fencing is required by any consulting Resource Agency (i.e. California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service), the project site shall be fenced with a temporary exclusion fence to keep special-status terrestrial wildlife species, including desert tortoise, from entering during construction. This exclusion fencing shall be constructed of silt fence material, metal flashing, plastic sheeting, or other materials that will prohibit wildlife from climbing the fence or burrowing below the fence. The fencing shall be buried approximately 12 inches below the surface and extend a minimum of 30 inches above grade. Fencing shall be installed prior to issuance of grading or building permits and shall be maintained during all phases of construction and decommissioning. The fencing shall be inspected by an authorized biologist approved by the Resource Agencies weekly and immediately after all major rainfall events through the duration of construction and decommissioning activities. Any needed repairs to the fence shall be performed on the day of their discovery. Exclusion fencing shall be removed once construction or decommissioning activities are complete. Outside temporarily fenced exclusion areas, the project proponent/operator shall limit the areas of disturbance. Parking areas, new roads, staging, storage and excavation locations shall be confined to the smallest areas possible. These areas shall be flagged and disturbance activities, vehicles, and equipment shall be confined to these flagged areas. When consultation with the

Resource Agency is required, such Resource Agency may impose additional requirements. Along with construction of tortoise exclusionary fencing, excavation of known or potential burrows cannot be accomplished without authorization from CDFW.

6. To prevent inadvertent entrapment of desert kit foxes, badgers, or other animals during construction, all excavated, steep-walled holes or trenches (defined as a 45-degree slope or greater) shall be covered with plywood or similar materials at the close of each working day. A small metal mesh material shall be stapled to the edges of the plywood and then secured to the ground using at least 10-inch long rebar or staples every 12 inches along the outer edge of the metal mesh material at the end of each working day and during the day when not actively being worked on/in. Non-covered holes or trenches shall be thoroughly inspected for trapped animals by a qualified biologist or their biological monitor at the beginning and end of each day, including non-work days. Immediately before such holes or trenches are filled, they shall again be thoroughly inspected by trained staff approved by the retained qualified biologist for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a listed species is trapped, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife, as appropriate for the species, BLM, and Kern County Planning and Natural Resources Department shall be contacted immediately. A hand-written log shall be prepared of the daily inspections during all activity requiring the trenching protection referenced above, and records from that log shall be furnished to the Kern County Planning and Natural Resources Department and BLM upon request.

7. Burrowing owls, mammals, and nesting birds can use construction pipes, culverts, or similar structures for refuge or nesting. All construction pipes, culverts, or similar structures with a diameter of 12 inches or less that have not been stored on the project overnight shall be thoroughly inspected for special-status wildlife or nesting birds before moving, burying, or otherwise using such pipe. All construction pipes, culverts, or similar structures with a diameter of 12 inches or less shall be capped prior to storing such materials at a construction site for one or more overnight periods. All construction pipes, culverts, or similar structures with a diameter of 12 inches or less that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved or disturbed in any way until a qualified biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by a qualified biologist holding the appropriate handling permits from the Resource Agencies. No one shall be allowed to touch a listed species without authorization from the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife. All necessary authorization permits shall be obtained from the appropriate resource agencies, and copies of all such final authorization permits shall be submitted to the Kern County Planning and Natural Resources Department and BLM.

8. 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, or relocated by a qualified biologist holding the appropriate handling permits from the Resource Agencies. No one shall be allowed to touch a listed species without authorization from the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife.

9. 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.
10. A speed limit of 10 miles per hour shall be enforced within the limits of the proposed project.
11. 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 (SWPP) or Soil Erosion and Sedimentation Control Plan (SESCP) (see Section 4.7, *Geology and Soils*, for more details on SESCP requirements). All detected erosion shall be remedied within 2 days of discovery or as described in the SWPP or SESCP. 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.
12. Fueling of equipment shall take place within existing roads No refueling within or adjacent to drainages or native desert habitats (within 150 feet) shall be permitted. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary.
13. Prior to any clearing and ground disturbing activities, the project proponent/operator shall submit a Maintenance, Trash Abatement, and Pest Management Program to the Kern County Planning and Natural Resources Department and BLM for review and approval. 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 twice per year once the project is operational; this can be done in conjunction with regular panel washing and site maintenance activities.
    b) 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.
    c) 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 and BLM.
    d) 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.

i. The following stipulation shall be included: All vegetation, debris or any other natural material collected as part of mowing, clearing or preparing the site for construction shall be removed the same day of such activities. Stockpiling is permitted for a period which shall not exceed ten (10) consecutive hours.

14. Workers shall be prohibited from bringing pets and firearms to the project site and from feeding wildlife.
15. Intentional killing or collection of any plant or wildlife species shall be prohibited.
16. Perimeter fencing during operations shall be made wildlife friendly by raising the bottom up 7 inches from the ground and knuckling back the bottom edge to allow movement of desert kit foxes and desert tortoises.
17. Prior to use of pesticides, the project proponent shall consult with CDFW and USFWS regarding the necessary authorization permits from those agencies. All necessary authorization permits shall be obtained from those agencies, and copies of all such final authorization permits shall be submitted to the Kern County Planning and Natural Resources Department and BLM.

**MM 4.4-7:** To protect special status animal species from disturbance during construction, 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 animal species wanders into the project site. In addition, a preconstruction survey of special status animal species shall be completed. Methodology for preconstruction surveys shall be appropriate for each potentially occurring special-status animal species including, American badger, desert kit fox, burrowing owl, Swainson's hawk, and migratory birds, and shall follow U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife preconstruction survey guidelines available. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site being disturbed. If any evidence of occupation of the project site special-status species is observed, a buffer shall be established by a qualified biologist that results in sufficient avoidance, as described below:

1. Preconstruction surveys shall be conducted by qualified biologists for the presences of American badger or Desert kit fox dens within 14 days prior to commencement of construction and decommissioning activities. The surveys shall be conducted for the entire area being disturbed in phases.
2. If active dens are observed and avoidance of den disturbance is feasible, the following buffers are required during construction activities;
   a. American badger active den: 30 feet
   b. Desert kit fox active den: 100 feet (or 200 feet if during the breeding season, as required below).
3. If potential kit fox dens are observed, the following measures are required to avoid potential adverse effects to kit fox;
   a. If the qualified biologist determines that the potential dens may be active during the breeding season (December 1 through June 30), the biologist shall implement

a 200-foot avoidance buffer and shall notify California Department of Fish and Wildlife, California State Lands Commission, the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM). No destruction of active dens is to occur during the breeding season.

b. If an active kit fox den is discovered with the potential to be occupied by a desert kit fox during the non-breeding season (July 1 through November 31), the den openings shall be avoided by at least 100 feet.

c. If an active kit fox den cannot be avoided during the non-breeding season, entrances to the dens shall be monitored for at least 5 consecutive days using infra-red cameras. The den entrance can be blocked with soil, sticks, and debris during those 5 days to discourage use of these dens prior to proposed project disturbance. The den entrances shall be blocked to an incrementally greater degree over the 5-day period. After the qualified biologist determines that kit fox have stopped using active dens within the proposed project boundary, the dens shall be immediately had-excavated with a shovel, filled and compacted to prevent re-use during construction.

d. A qualified biologist shall be onsite each day that will result in new ground disturbance (initial activity and any lapse in activity for 14 days or more) and during ground disturbing operation and maintenance activities to ensure the buffers are maintained and that kit fox are not being impacted. A qualified biologist shall remain on call throughout construction and decommissioning in the event a desert kit fox wanders onto the site.

e. Perimeter fencing during operations shall be made wildlife friendly by raising the bottom up 7 inches from the ground with the bottom edge knuckled back to allow movement of desert kit foxes and desert tortoises.

f. If the qualified biologist determines that potential dens are inactive, the dens that cannot be avoided shall be excavated by hand under the direct supervision of a qualified biologist with a shovel, filled and compacted to prevent desert kit fox from reusing them during construction. Identified inactive dens will be confirmed inactive by monitoring of the burrow with cameras and track plates for 5 consecutive days to confirm no usage.

**MM 4.4-8:** The project proponent/operator shall implement the following measures, based on the 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 and decommissioning activities will be avoided and minimized to less than significant levels: The survey(s) shall occur no more than 14 days prior to ground-disturbing activities (i.e., exploratory geotechnical drilling, vegetation clearance, grading, etc.), including start or re-start of construction or decommissioning activities, as applicable. The survey(s) need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site being disturbed. The survey methodology 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.

A biologist shall prepare a preconstruction survey report that shall be submitted to CDFW, the Kern County Planning and Natural Resources Department, and Bureau of Land Management (BLM).

1. A qualified biologist shall conduct an additional pre-construction survey of all impact areas within 24-hours of start or restart (as the case may be) of ground disturbing activities associated with construction or decommissioning activities to identify any additional burrowing owls or burrows necessitating avoidance, minimization, or mitigation measures.

   If active burrowing owl burrows are detected on site, they shall be protected in place through the use of visual screens or through CDFW-identified restricted activity dates and setback distances (presented in **Table 4.4-3,** *Burrowing Owl Burrow Restricted Activity Dates and Setback Distances*, below), or other measures as described in the 2012 CDFW Staff Report and/or approved by CDFW for the project to minimize disturbance impacts unless otherwise authorized by CDFW. Burrowing owls shall not be moved or excluded from burrows during the breeding season.

**TABLE 4.4-3: BURROWING OWL RESTRICTED ACTIVITY DATES AND SETBACK DISTANCES**

| | Level of Disturbance (meters) | | |
|---|---|---|---|
| **Time of Year** | **Low** | **Medium** | **High** |
| April 1 – August 15 | 200 | 500 | 500 |
| August 16 – October 15 | 200 | 200 | 500 |
| October 16 – March 31 | 50 | 100 | 500 |

SOURCE: CDFW 2012.

2. If avoidance of active burrows is infeasible, the owls can be passively displaced from their burrows according to recommendations made in the 2012 CDFW Staff Report on Burrowing Owl Mitigation, or alternative methods approved CDFW. Burrowing owls shall not be excluded from burrows according to the following requirements, or alternative methods approved by CDFW:

   a. Occupied burrows shall not be disturbed during the nesting season generally defined as February 1 through August 31.

   b. Before excluding owls during the non-nesting season, generally defined as September 1 through January 31, a qualified biologist meeting the Biologist Qualifications set forth in the 2012 CDFW Staff Report, shall verify through noninvasive methods through visual observations, followed by use of a burrow scope that either: (1) the owls have not begun egg-laying and incubation; or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Burrowing owls shall not be moved or excluded from burrows during the breeding season.

   c. A Burrowing Owl Exclusion Plan is developed and approved by the applicable local CDFW office and submitted to the Kern County Planning and Natural

Resources Department and Bureau of Land Management (BLM). The plan shall include, at a minimum:

i. Confirm by site surveillance that the burrow(s) is empty of burrowing owls and other species preceding burrow scoping;

ii. Type of scope and appropriate timing of scoping to avoid impacts;

iii. Occupancy factors to look for and what will guide determination of vacancy and excavation timing, one-way doors shall be left in place a minimum of 48 hours to ensure burrowing owls have left the burrow before excavation, visited twice daily, and monitored for evidence that owls are inside and can't escape (i.e., look for sign immediately inside the door);

iv. How the burrow(s) will be excavated. Excavation using hand tools with refilling to prevent reoccupation is preferable whenever possible (may include using piping to stabilize the burrow to prevent collapsing until the entire burrow has been excavated and it can be determined that owls do not reside in the burrow);

v. Removal of other potential owl burrow surrogates or refugia on site;

vi. Photographing the excavation and closure of the burrow to demonstrate success and sufficiency;

vii. How the impacted site will continually be made inhospitable to burrowing owls and fossorial mammals (e.g., by allowing vegetation to grow tall, heavy disking, or immediate and continuous grading) until development is complete.

d. Permanent loss of occupied burrow(s) and habitat is mitigated in accordance with the measures described below.

e. Temporary exclusion is mitigated in accordance with the measures described below.

f. Site monitoring is conducted prior to, during, and after exclusion of burrowing owls from their burrows sufficient to ensure take is avoided. Conduct daily monitoring for 1 week to confirm young of the year have fledged if the exclusion will occur immediately after the end of the breeding season.

g. In accordance with the Burrowing Owl Exclusion Plan, a qualified wildlife biologist shall excavate burrows using hand tools. Sections of flexible plastic pipe or burlap bag shall be inserted into the tunnels during excavation to maintain an escape route for any animals inside the burrow. One-way doors shall be installed at the entrance to the active burrow and other potentially active burrows within 160 feet of the active burrow and monitored for at least 48 hours after installation. If burrows will not be directly impacted by the project, one-way doors shall be installed to prevent use and shall be removed after ground disturbing activities have concluded in the area. Only burrows that will be directly impacted by the project shall be excavated and filled.

h. During construction activities, monthly and final compliance reports shall be provided to the CDFW, Kern County Planning and Natural Resources Department,

BLM, and other applicable resources agencies documenting the effectiveness of mitigation measures and the level of burrowing owl take associated with the proposed project.

i. If passive relocation is required, compensatory mitigation for lost breeding and/or wintering habitat shall be implemented on- offsite in accordance with Burrowing Owl Staff Report guidance. The following recommendations shall be implemented:

   i. Temporarily disturbed habitat shall be restored, to pre-project conditions, including decompacting soil and revegetating. If restoration is not feasible, then the project proponent/operator shall consult with the CDFW when determining offsite mitigation acreages, but shall be no less than 160 acres.

   ii. In order to protect habitat, the measures described below shall be implemented.

      1) Permanently conserve similar vegetation communities (grassland, scrublands, desert, and agriculture [grazing lands]) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non- breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals. Conservation shall occur in areas that support burrowing owl habitat and can be enhanced to support more burrowing owls.

      2) Permanently protect mitigation land through a conservation easement deeded to a nonprofit conservation organization or public agency with a conservation mission. If the project is located within the service area of a CDFW-approved burrowing owl conservation bank, the project proponent/operator may purchase available burrowing owl conservation bank credits.

      3) Develop and implement a mitigation land management plan in accordance with Burrowing Owl Staff Report guidelines to address long-term ecological sustainability and maintenance of the site for burrowing owls.

      4) Fund the maintenance and management of mitigation land through the establishment of a long-term funding mechanism such as an endowment.

      5) Habitat shall not be altered or destroyed, and burrowing owls shall not be excluded from burrows, until mitigation lands have been legally secured, are managed for the benefit of burrowing owls according to CDFW-approved management, monitoring and reporting plans (including construction of artificial burrows if necessary), and the endowment or other long-term funding mechanism is in place or security is provided until these measures are completed.

      6) Mitigation lands shall be on, adjacent to, or in proximity to the impact site, where feasible, and where habitat is sufficient to support burrowing owls.

**MM 4.4-9**: To mitigate for potential impacts to nesting birds, special-status birds, and birds protected under the Migratory Bird Treaty Act and California Fish and Game Code during

construction and decommissioning activities, the following measures shall be implemented as part of the approval for a grading or building permit.

1. During the avian nesting season (February 1 – August 31), a qualified biologist shall conduct a preconstruction avian nesting survey no more than 7 days prior to initial vegetation clearing. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur within 7 days prior to clearing 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 biologist be allowed to handle an active 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 western meadowlark, nests in shrubs that could support nests, and suitable raptor nest sites such as nearby trees and power poles. Access shall be granted on private offsite properties prior to conducting surveys on private land. If access is not obtainable, the biologist shall survey these areas from the nearest vantage point with use of spotting scopes or binoculars.
2. If construction is scheduled to occur during the non-nesting season (September 1 through February 1), no preconstruction surveys or additional measures are required for non-listed avian species.
3. If construction begins in the non-nesting season and proceeds continuously into the nesting season within any particular construction or decommissioning area, no surveys are required for non-listed avian species so long as all suitable nesting sites have been cleared from active construction/decommissioning areas.
4. 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 raptor species' nests (or a suitable distance otherwise determined in consultation with California Department of Fish and Wildlife [CDFW]). Any nest of a federal- or state-listed bird species shall require consultation with the appropriate agency (U.S. Fish and Wildlife Service 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 wildlife biologist has determined that the birds have fledged or the proposed project component(s) have been redesigned to avoid the area. All no-disturbance buffers shall be delineated in the field with visible flagging or fencing material.

**MM 4.4-10:** 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:

1. Identification of all raven nests within the project area during construction;
2. Weekly inspection under all nests in the project area for evidence of raven predation on local wildlife (bones, carcasses, etc.), and, if evidence of listed-species predation is noted, submit a report to California Department of Fish and Wildlife, U.S. Fish and

Wildlife Service, the Kern County Planning and Natural Resources Department, and the Bureau of Land Management (BLM) within 5 calendar days;

3. Provisions for the management of trash and water that could attract common ravens during the construction and operation phases of the proposed project.
4. 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 evidence payment of any required fees shall be submitted to the Kern County Planning and Natural Resources Department and BLM.

Implementation of Mitigation Measures MM 4.1-4, MM 4.7-4 and 4.9-2 would be required. (See Section 4.1, *Aesthetics*, 4.7, *Geology and Soils*, and Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-10, MM 4.1-4, MM 4.7-4, and MM 4.9-2, 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, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS.

One sensitive natural community, Joshua tree woodland, was recorded on the project site. Joshua tree woodland is considered a sensitive natural community by CDFW. Project implementation would result in less than 2 acres of this sensitive natural community removal, which would be considered significant without mitigation; however, impacts would be mitigated through the implementation of Mitigation Measures MM 4.4-3 and MM 4.4-4.

Scale broom scrub, a riparian or wetland area east of the project site, is a subset of the NVC macrogroup Madrean warm semi-desert wash woodland/scrub which requires a 200-foot setback specified in the DRECP. The project site currently encroaches within 160 feet of this area however, impacts would be mitigated through the implementation of Mitigation Measure MM 4.4-11, which would establish buffer areas around sensitive species and/or communities and impacts would be less than significant.

BMPs should be employed to prevent erosion in riparian or wetland areas accordance with the project's approved Soil Erosion and Sedimentation Control Plan (SESCP) (see Section 4.7, *Geology and Soils*, for more details on SESCP requirements).

Four ephemeral drainages were identified and delineated within the project site. These drainages are potentially subject to RWQCB and CDFW jurisdiction. Because they drain to inland areas of California, the USACE is not expected to assert jurisdiction over the features (USACE 2013). Construction activities from the proposed project could permanently impact these potentially jurisdictional features as a result of grading and construction of the solar facility, including supporting infrastructure. If complete avoidance of

jurisdictional waters is not feasible, impacts to jurisdictional areas would be considered significant but mitigatable through implementation of Mitigation Measures MM 4.4-12, MM 4.4-13, and MM 4.7-4.

## Mitigation Measures

**MM 4.4-11:** The project proponent/operator shall avoid and minimize impacts to scale broom scrub and any other DRECP riparian vegetation type by implementing a 200-foot avoidance buffer. The avoidance buffer can be reduced, but only after receiving approval from the Bureau of Land Management (BLM) that the permitted construction activities can be classified as a minor incursion as defined with the DRECP. Impacts within the 200-foot avoidance buffer will not be permitted without BLM approval.

**MM 4.4-12:** 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 by permanent facilities. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board (RWQCB), the County and Bureau of Land Management (BLM). The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:

1. Avoidance of potential jurisdictional features (ephemeral drainages). This may be shown in plan form.
2. Any material/spoils generated from project activities shall be located away from jurisdictional areas 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.
3. Fuel or hazardous materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and be placed generally at least 50 feet from the top of bank.
4. Any spillage of fuel or hazardous 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 4.4-13:** If potential jurisdictional features cannot be avoided, the project proponent/operator shall be subject to provisions as identified below:

1. 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 California Department of Fish and Wildlife (CDFW) on the need for a streambed alteration agreement. Correspondence and copies of reports shall be submitted to the County and BLM.
2. 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.

3. Compensatory mitigation for impacts to unvegetated streambeds/washes shall be identified and secured prior to disturbance of the features at a minimum 1:1 ratio, or as approved by the RWQCB or CDFW. Mitigation may be either through onsite or offsite mitigation, or purchasing credits from an approved mitigation bank.
4. 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 and Bureau of Land Management (BLM).
5. A Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared that outlines the compensatory mitigation in coordination with the RWQCB and CDFW.
    a. 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).
    b. The HMMP shall include remedial measures in the event that performance criteria are not met.
    c. If mitigation is implemented off site, mitigation lands shall be comprised of similar or higher quality and preferably located in the vicinity of the site or watershed. 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.
    d. Copies of any coordination, permits, etc., with RWQCB and CDFW shall be provided to the County and BLM.

Implementation of Mitigation Measure MM 4.7-4 would be required. (See Section 4.7, *Geology and Soils*, for full mitigation measure text).

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-11 through MM 4.4-13 and MM 4.7-4, impacts would be less than significant.

### Impact 4.4-3: The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

As described in Impact 4.4-2, the project site was evaluated for the presence of wetlands through the wetland delineation process. Four ephemeral drainages were identified and delineated within the project site. These drainages are potentially subject to RWQCB and CDFW jurisdiction. Because they drain to inland areas of California, the USACE is not expected to assert jurisdiction over the features. Construction activities from the proposed project could permanently impact these potentially jurisdictional features as a result of grading and construction of the solar facility, including supporting infrastructure. If complete avoidance of jurisdictional waters is not feasible, impacts to jurisdictional areas would be considered

significant but mitigatable through implementation of Mitigation Measures MM 4.4-12, MM 4.4-13 and MM 4.7-4.

## Mitigation Measures

Implementation of Mitigation Measures MM 4.4-12, MM 4.4-13 and MM 4.7-4 (See Section 4.7, *Geology and Soils*, for full mitigation measure text) would be required.

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-12, MM 4.4-13, and MM 4.7-4, impacts would be less than significant.

### Impact 4.4-4: The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

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. Similarly, the project site is not located within a known wildlife migratory corridor or a wildlife connectivity area connecting large open space areas in the region or locally, as mapped by the California Essential Habitat Connectivity Project. Although the proposed project would introduce structures to the project site that would physically impede wildlife movement in certain areas and directions, the wind energy projects in the area of the proposed project, as well as the areas to the south which are mainly native plant communities with scattered unpaved roads and residences, provide for largely unrestricted wildlife movements through natural or semi-natural habitats. Therefore, project features that would restrict wildlife movement represent a very small fraction of area available for wildlife movement in the surrounding area. Therefore, implementation of the proposed project would not restrict local or regional wildlife movement. All lighting installed as a part of the proposed project would comply with the Kern County Dark Skies Ordinance and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties as stipulated in Mitigation Measure MM 4.1-4 This would help reduce impacts to wildlife moving through the area. Therefore, the proposed project is not expected to adversely impact wildlife movement and impacts would be less than significant.

## Mitigation Measures

Implementation of Mitigation Measure MM 4.1-4 (See Section 4.1, *Aesthetics*, for full mitigation measure text) would be required.

## Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.1-4, 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.**

Although there is no local policy or ordinance protecting biological resources on the project site, Joshua tree woodland is designated as a CDFW sensitive plant community and regulated native plants (Joshua tree, silver cholla, and beavertail cactus) are located on the project site. These regulated native desert plants are protected under the California Desert Native Plant Act, including yucca (i.e., Joshua tree) and cactus species. However, the project proponent/operate shall pay the required fee to remove the regulated native plants prior to construction activities. Therefore, significant impacts would not occur to regulated native plants. Significant impacts, without mitigation, could occur to Joshua trees woodland on the project site. However, this impact would be mitigated to a level of less than significant through the implementation of Mitigation Measure MM 4.4-3 through MM 4.4-5.

## Mitigation Measures

Implementation of Mitigation Measures MM 4.4-3 through MM 4.4-5 would be required.

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-3 through MM 4.4-5, 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 proposed project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

The project site is located within the DRECP. The DRECP has not yet been adopted by any public agency; however, the Draft DRECP, dated August 2014, identifies the project site as being located within a Development Focus Area in the Interagency Preferred Alternative. The Development Focus Areas represent the areas where activities associated with solar, wind, and geothermal renewable energy development would be consistent with the DRECP. Since the proposed project is a solar energy development within the Development Focus Area, the proposed project would comply with all applicable biological resources conservation and management actions in the DRECP. Therefore, this project would be consistent with the DRECP and no conflict would occur.

## Mitigation Measures

No mitigation would be required.

## Level of Significance

There would be no impact.

# 4.4.5 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. The project is co-located within another energy facility sharing a substation and other facilities, which minimizes some cumulative impacts. As described above, the project-specific impacts of the proposed project would be less than significant with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13, as well as implementation of Mitigation Measures MM 4.1-4, MM 4.7-4 and MM 4.9-2.

As large-scale energy projects and urbanization pressures increase within Kern County, impacts to biological resources within the region are expanding on a cumulative level. As described in Table 3-5, *Cumulative Projects List*, in Chapter 3, *Project Description*, of this EIR/EA, other projects with similar species effects have been completed within the Antelope Valley. 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 proposed project in addition to the other projects underway or proposed within Kern County would impact transient wildlife species, including burrowing owls, foraging raptors, and desert kit fox. The project site contains habitat that support insects, rodents, and small birds that provide a prey base for raptors and terrestrial wildlife. In addition, based on the literature review and database search completed for the proposed 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 result in a significant and unavoidable cumulative loss of foraging and nesting habitat for special-status species. While the proposed project would have less than significant impacts with the implementation of Mitigation Measures MM 4.4-1 through MM 4.4-17, MM 4.7-4, and MM 4.9-2, when combined with related projects, 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. 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, which threatens other desert wildlife including special-status species, is potentially significant. However, the contribution of the proposed project with mitigation incorporated, would not be cumulatively considerable because project impacts to specials-status wildlife would be reduced.

The residual effects on migratory birds of the proposed project were determined to be less than significant. This cumulative analysis analyzes the potential for these incremental impacts of the proposed project to

combine with other past, present, and reasonably foreseeable projects to cause or contribute to a significant cumulative effect within the Central Valley portion of the Pacific Flyway for the duration of the proposed 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.

Impacts associated with construction of the gen-tie lines are expected to encompass a relatively small development footprint and would therefore result in minimal ground disturbance. Gen-tie infrastructure would not cause barriers to wildlife movement and would be within disturbed and developed areas and, therefore, would not result in a considerable contribution to significant impacts.

## Mitigation Measures

Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 as well as MM 4.1-4, MM 4.7-4 and MM 4.9-2 would be required (See Section 4.1, *Aesthetics*, Section 4.7, *Geology and Soils*, and Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).

## Level of Significance after Mitigation

Despite implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 as well as MM 4.1-4, MM 4.7-4 and MM 4.9-2, cumulative impacts would be significant and unavoidable to transient wildlife species, including burrowing owls, foraging raptors, desert kit fox, and migratory birds.

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Section 4.5
# Cultural Resources

## 4.5.1 Introduction

This section of the EIR/EA provides contextual background information on cultural resources in the project site, as well as the prehistoric, ethnographic, and historical settings of the region. This section also summarizes the results of a cultural resources assessment, including archival research and cultural resources surveys of the project site.

This section is based on a Cultural Resources Survey Report (SWCA 2017), which details the results of a cultural resources records search and field survey for the project, along with Native American consultation conducted by County Staff in accordance with Assembly Bill (AB) 52. National Historic Preservation Act Section 106 consultation between the BLM and the State Historic Preservation Officer (SHPO) is presently occurring (see Chapter 11, Environmental Assessment for details). The report is provided in Appendix E of this EIR. The study was conducted in compliance with Section 106 of the National Historic Preservation Act as well as 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 area. Due to the confidential nature of the location of cultural resources, information regarding locations of cultural resources has been removed from these reports and is not included in the appendix.

## Cultural Resource Terminology

For the purposes of CEQA, "cultural resources" generally refer to prehistoric and historical archaeological sites 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 floodplains, in riverbeds, 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.

**Cultural Survey Area**: All areas of potential permanent and temporary project impacts.

**Ethnographic:** Relating to the study of human cultures. "Ethnographic resources" represent the heritage resource of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.

**Historic period:** The period that begins with the arrival of the first non-native population and, thus, varies by area. In 1772, Commander Don Pedro Fages was the first European to enter Kern County, initiating the historic period of the project site.

**Historical Resource:** This term is used for the purposes of CEQA and is defined in the CEQA *Guidelines* (Section 15064.5) as: (1) a resource listed in, or determined to be eligible for listing in the California Register of Historical Resources (CRHR); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (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 (CEQA Statute 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.

**Paleontological Resources (Fossils):** The physical remains of plants and animals preserved in soils and sedimentary rock formations. Paleontological resources contribute to the understanding of past environments, environmental change, and the evolution of life.

**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 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.

**Unique Paleontological Resource:** This term is defined as a fossil that meets one or more of the following criteria: (1) it provides information on the evolutionary relationships and developmental trends among organisms, living or extinct; (2) it provides data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein; (3) it provides data regarding the development of biological communities or interaction between plant and animal communities; (4) it demonstrates unusual or spectacular circumstances in the history of life; or (5) the fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

# 4.5.2 Environmental Setting

## Paleoenvironment

As glaciers in the western United States began to retreat between 12,000 and 10,000 years ago, the climate became dramatically warmer and drier, and vegetation communities such as piñon-juniper woodlands, along with the animals that relied on them, began to inhabit higher elevations (Price et al. 2008). During the late Pleistocene, fossil evidence suggests that the western Mojave was inhabited by numerous large mammalian species, including sloth, horse, bear, mammoth, bison, camel, and prong-horned antelope. Large carnivorous species included saber-toothed cats, wolves, mountain lions, desert coyotes and foxes, while smaller animals included rodent, 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 (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 distinct technologies, artifact types, economic systems, trade and 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 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 archaeological sites possessing distinctive large, fluted projectile points known as Clovis 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. 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 stemmed 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 (6000–3000 B.C.)

Archaeological deposits ascribed to 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 resources associated with streams or other water sources. 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 includes roughly formed projectile points, “heavy-keeled” scrapers, choppers, and a greater prevalence of flat millingstones and manos, indicating 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).

## Gypsum Complex (c. 2000 B.C.–A.D. 200)

Many archaeological sites of this period are small and surficial, probably indicative of temporary occupation. It is during this time, however, that more archaeological evidence suggestive of inter-tribal trade appears, particularly between the desert and the coast. At 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 beans. Other artifacts associated with the Gypsum Complex include Humboldt Concave Base, Gypsum Cave, Elko Eared, and Elko Corner-notched projectile points (Warren 1984).

## Rose Springs Complex (c. A.D. 200–1200)

The general cultural pattern for this period is a continuation of that of the preceding Gypsum Complex. 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, evidenced by shell beads and steatite, as well as an introduction of Anasazi influence from the eastern Great Plains as seen in 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, approximately 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–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. 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 and Kawaiisu, the two groups that are known to have lived in the vicinity of the project area, are described in more detail below, as well as the Serrano, who lived in close proximity

## Kawaiisu

The Kawaiisu may be divided into two groups: The Mountain Kawaiisu and the Desert Kawaiisu (Garfinkel and Williams 2010). The 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 culture, 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 parts of San Bernardino County, south of the project site. The traditional territory for the Serrano centered in the San Bernardino Mountains and extended northeast into parts of the Mojave River area and southeast to the Tejon Creek area. Their lands were south of the traditional Kawaiisu lands and north of lands inhabited by the Cahuilla. Traditionally, the Serrano people were hunter-gatherers who used resources in the Apple and Lucerne Valleys in the winter and in the Big Bear Lake area in the summer. Both acorns and piñon nuts featured as staple foods in their diet, as did small game that could be obtained using traps and bow-and-arrow technology (from SWCA, 2017).

The Serrano language is part of the Serrano division of a branch of the Takic family of the Uto-Aztecan linguistic stock. The Serrano language is one of the two Serrano languages, Kitanemuk and Serrano, which are closely related. Kitanemuk lands were northwest of Serrano lands. The Serrano language was originally spoken by a relatively small group located within the San Bernardino and Sierra Madre Mountains, and the term Serranohas come to be ethnically defined as the name of the people in the San Bernardino Mountains. The Vanyume, who lived along the Mojave River and associated Mojave Desert areas and are also referred to as the Desert Serrano, spoke either a dialect of Serrano or a closely related language (from SWCA, 2017).

# Historic Context

## Early Exploration

Native American groups were subject to dramatic social and cultural changes after the Spanish began colonizing coastal California in 1769. Of primary importance in affecting these changes were the establishment of the Spanish mission system throughout the State and the introduction of new diseases, which spread rapidly and decimated the native population. Although the initial occupation of California occurred relatively quickly along the coastlines, the interior portion of the state, such as the Mojave Desert region, did not feel the effects of European Settlement until much later. The first Europeans known to have visited the Mojave were Pedro Fages in 1772, and Juan Bautista de Anza and Father Francisco Garcés in 1774 (SWCA, 2017). 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. Garcés may have crossed the playa of Rogers Dry Lake in the Antelope Valley in 1776 (SWCA, 2017).

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 (SWCA, 2017).

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 Smith's 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 provided 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, Cinco, and Mojave. In 1884, this line joined the Atchison, Topeka, & Santa Fe line that ran east through Needles (SWCA, 2017).

## Mining

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 (SWCA, 2017). 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. In the Fremont Valley, mining played a significant role in the development of the area. Gold was discovered in the Rand and El Paso mountains surrounding the valley.

The Mojave Mining District comprised about 70 square miles of primarily gold and silver mines, which today consist of historic-period archaeological sites and built resources for the purposes of CEQA. Most of these occur to the north of the Project site. Gold was first discovered within the district in 1894 by George Bowers at the site of the Yellow Rover Mine on Standard Hill (SWCA, 2017). 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 (SWCA, 2017). 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. Some limited mining activity occurred after the war, however, the district's post-war production was less than one-tenth that of its pre-war production (Shumway et al. 1980). Total production in the district, as of 1958, was more than $20 million in gold and silver (SWCA, 2017).

Gold and silver deposits within the Mojave Mining District were primarily associated with five buttes located south of the town of Mojave and north of the town of Rosamond: Standard Hill, Soledad Mountain, Middle Butte, Willow Springs Mountain, and Tropico Hill (SWCA, 2017). The most important of these buttes, in terms of the number of deposits and total productivity, was Soledad Mountain, home of the Golden Queen Mine Group, which produced over $10 million in gold and silver between 1894 and 1942, with $6 million alone produced between 1936 and 1942, when it closed (Shumway et al. 1980). Standard Hill, also known as Bowers Hill or Elephant Butte, is the northernmost of the five buttes constituting the Mojave Mining District and is where George Bowers made the first gold discovery in the Mojave Mining District in 1894 at the Yellow Rover mine. In 1900, the Yellow Rover and Exposed Treasure were consolidated into the Exposed Treasure Gold Mining Company, and in 1901, a 20-stamp mill and cyanide plant were erected in order to process the mined ore (SWCA, 2017). In 1921, the Yellow Rover, Exposed Treasure, and Desert Queen mines became known collectively as the Standard Group, operated by Standard Mining and Milling Company. The Standard Group of Mines produced approximately $3,500,000 in gold between 1884 and 1958 (SWCA, 2017).

## 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 (SWCA, 2017).

## 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 (Los Angeles County Library [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 project site has not been associated with past agricultural use due to the lack of water. The project site is primarily comprised of primarily undeveloped lands that are designated for agricultural uses, but are land that is not currently irrigated or otherwise used for agricultural purposes.

## The Los Angeles Aqueduct

Despite the lack of local water resources, water played a significant role the history of the Fremont Valley with the construction of the Los Angeles Aqueduct, which passes just over a mile to the south of the project site. When the local water resources of the City 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 to prevent water loss 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 cultural resources, SWCA Environmental Consultants (SWCA) conducted a cultural resources study of the project site. This study included archival research (a review of previous archaeological survey work conducted in the area and associated reports, map and historic aerial photography research, and review of local land patents), and field survey undertaken to identify any cultural resources located within the project site (SWCA 2017). The methodology and results of this study are summarized below; for greater detail, see Appendix E of this EIR/EA.

### *Records Search and Previous Studies*

The records search for the Project, as summarized in the SWCA cultural resources study, relied on a study conducted by Sapphos for the Tylerhorse Wind Energy Project (summarized in SWCA 2017). The 1-mile study area for that project completely encompassed the current project site. The Tylerhorse Wind Energy Project identified a total of seven cultural resources studies within 1 mile of the project site, all but one for wind energy projects. Five are within the project site, with the result that approximately 80 percent of the project site has previously been subjected to field survey for cultural resources.

The records search for the Tylerhorse Wind Energy Project identified 25 cultural resources within a 1-mile radius of the current project site. Of the 25 cultural resources, 18 are historic-period archaeological sites (composed of a homestead foundation, a historic debris scatter, a historic rock ring, and rock features of unknown function); six are prehistoric archaeological sites (made up of midden, bed rock mortars, pictographs, and a milling station); and one is a prehistoric isolate (consisting of a possible projectile point). None of the previously recorded resources are located within the current project site. Although outside the 1-mile records search boundary for the project, the Los Angeles Aqueduct (P-15-003549/CA-KER-3549H) passes approximately 1.25 miles south of the southern end of the gen-tie line. This resource is listed in the CRHR and has previously been determined eligible for listing in the National Register of Historic Places (NRHP) with concurrence from the State Historic Preservation Office (SHPO). The entire length of the aqueduct was found eligible under Criterion 1/A, and some segments were found eligible under Criterion 3/C.

### *Map and Historic Aerial Photography Research*

Review of early 19th century plat maps depict transportation routes and survey lands in the region (SWCA 2017). Plat maps prior to the 1930s do not show any roads or historic features located within the project site. The 1936 Dependent Resurvey plat map, however, exhibits a number of north-to-south oriented roads crossing the project site. These roads seem to provide access to mines and homesteads in the general area along the base of the Tehachapi Mountains located to the north and outside of the project site.

A review of historic topographic maps from the early 1900s up to 1965 indicates that the project site and vicinity were only sparsely developed as a result of the construction of the Los Angeles Aqueduct. More specifically, the 1908 historic topographic map indicates that the project site is located north of the aqueduct, and the town of Willow Springs is seen as located southeast of the project site. Railroad stations are present at Rosamond, Gloster, and Mojave. The 1915 historic topographic map shows that the aqueduct was fully constructed by this time and that mining activity was taking place at Willow Springs, Rosamond,

and Cactus Mine. Additionally, the project vicinity is depicted as settled with possible residences and homesteads. The 1943 historic topographic map depicts additional development related to the aqueduct. Lastly, the 1965 historic topographic map continues to show mining activities in the area, and ranches (Willow Springs Ranch and Wagon Wheel Ranch) are shown east of the project site. Review of historic aerial photographs from the 1950s through the 1970s indicates that the project vicinity was likely utilized for ranching, as opposed to agriculture, and that little to no settlement had occurred within the project site.

### Local Land Patents

A total of four land patents (dating between 1919 and 1925) are on file at the Bureau of Land Management (BLM) for lands within the project site, and these are correlated with the development of the town of Willow Springs and the construction of the aqueduct. These patents also suggest an influx of settlers to the project vicinity in the 1910s and 1920s. Additionally, many sections within the project site were part of grants to the Southern Pacific Railroad Company, which included sections of public lands within 10 miles on either side of the railroad right-of-way.

## *Native American Correspondence*

As indicated in the cultural resources study for the project (SWCA 2017), a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) was not conducted. However, previous studies (Manzana Wind Facility and the Tylerhorse Wind Energy Project) which surround the current project site included SLF searches, which yielded negative results for Native American sacred sites (SWCA 2017).

## *Cultural Resources Field Survey*

SWCA archaeologists conducted an intensive-level pedestrian survey of the project area on June 27, 2016 (encompassing 78.8 acres) and on January 18, 2017 (encompassing 4.7 acres), totaling 83.5 acres. Per BLM direction, SWCA only surveyed areas of the project site that had not been surveyed or that had been surveyed prior to 2010. Surveys were conducted by walking parallel transects spaced a maximum of 15 meters apart. The project site yielded approximately 80 to 90 percent ground surface visibility due to the existence of some seasonal grasses (SWCA, 2017), meaning it is reasonable to assume that the pedestrian survey would have identified most artifacts on the ground surface. Where cultural materials were encountered, SWCA collected all data necessary to complete the appropriate State of California Department of Parks and Recreation (DPR) 523 series forms.

A total of two previously identified isolates (one historic-period and one prehistoric) were identified within the project site as a result of pedestrian survey. The historic-period isolate is a hole-in-top food can that dates from the early 1900s to 1940 and likely contained evaporated milk. The prehistoric isolate is a modified chert flake with cortex on both sides.

Considering that approximately 80 percent of the APE had previously been surveyed and did not identify the presence of cultural resources, and considering that the current study identified only two isolated artifacts, the project site is unlikely to contain significant archaeological resources. Furthermore, although the depositional context of the area has the potential to contain partially or shallowly buried resources, the sparse vegetation provided excellent ground surface visibility to facilitate the identification of archaeological materials if they were present. Though it is impossible to completely rule out subsurface deposits, the evidence indicates that it is unlikely (SWCA, 2017).

# 4.5.3 Regulatory Setting

## Federal

### Section 106 of the National Historic Preservation Act (NHPA)

Archaeological resources are protected through the NHPA of 1966, as amended (16 U.S. Code 470f), and its implementing regulation, Protection of Historic Properties (Code of Federal Regulations [CFR] 36 Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the SHPO a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the NRHP. As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the NRHP. Under the NHPA, a resource is considered significant if it meets the NRHP listing criteria at 36 CFR 60.4.

### National Register of Historic Places

The NRHP was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (CFR 36 Section 60.2). The NRHP recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior 1995):

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for listing in the NRHP (U.S. Department of the Interior 1995).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior 1995). The NRHP recognizes seven qualities that, in various combinations, define integrity: location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity, a property must possess

several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

## Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

## West Mojave Plan

The project site falls within the area covered by the Bureau of Land Management (BLM) West Mojave Plan (WMP), whose conservation program is intended to apply to both public and private lands but was never adopted or completed for private land. The WMP adopted on BLM public land is an attempt to define a regional strategy for conserving 58 plants and animals. In addition, the WMP an amendment to the California Desert Conservation Area (CDCA) Plan, which recognizes the importance of paleontological, prehistoric, and historic resources and places of cultural and religious value to Native Americans. The WMP's goals related to cultural resources include the following:

- Conduct an inventory of cultural resources to the fullest extent possible to expand knowledge of these resources
- Protect and preserve to the greatest extent possible representative samples of these resources
- Give full consideration to these resources during land use planning and management decisions
- Manage to maintain and enhance resource values
- Ensure that BLM's activities avoid inadvertent damage to cultural resources
- Achieve proper data recovery where adverse impacts cannot be avoided

The CDCA Plan also states that Native American values will be considered in all CDCA land use and management decisions. The WMP has not been adopted for privately owned lands; however, the proposed project would be consistent with these goals even though they do not apply to the proposed project.

# State

## California Register of Historical Resources (CRHR)

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Certain properties, including those listed in, or formally determined eligible for listing in, the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified

as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

> Criterion 1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
>
> Criterion 2. It is associated with the lives of persons important in our past.
>
> Criterion 3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
>
> Criterion 4. It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC 5024.1, Title 14 California Code of Regulations (CCR), Section 4852(c), a cultural resource must retain integrity to be considered eligible for the CRHR. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as farming, often lack integrity because they have been directly damaged or moved from their original location, among other changes.

Typically, an archaeological site in California is recommended eligible for listing in the CRHR based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods, or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions. However, archaeological sites may also be recommended eligible under CRHR Criteria 1, 2, and/or 3.

## 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 No. 770. CHL Nos. 770 and above are automatically listed in the CRHR.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

- 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);
- It is associated with an individual or group having a profound influence on the history of California; or

- It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

## California Points of Historical Interest

California Points of Historical Interest (PHI) are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. PHI designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the PHI designation is retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a PHI, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type within the local geographic region (city or county);
2. It is associated with an individual or group having a profound influence on the history of the local area; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

## California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. The CEQA *Guidelines* (Title 14 CCR Section 15064.5) recognize that a historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the CEQA *Guidelines* apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its

immediate surroundings such that the significance of a historical resource would be materially impaired) in the significance of a historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (CEQA *Guidelines* Sections 15064.5(b)(1), 15064.5(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the CEQA *Guidelines*, then the site may be treated in accordance with the provisions of Section 21083 as 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 the resources to be preserved in place (Section 21083.2(b)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA *Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA *Guidelines* Section 15064.5(c)(4)).

## Native American Heritage Commission

PRC Section 5097.91 established the NAHC, the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

## California Public Records Act

Sections 6254(r) and 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public related to “Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission.” Section 6254.10 specifically exempts from disclosure requests “records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency”.

## California Health and Safety Code Sections 7050 and 7052

Health and Safety Code Section 7050.5 declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

## California Penal Code Section 622.5

California Penal Code, Section 622.5, provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands, but specifically excludes the landowner.

## Public Resources Code Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

# Local

## Kern County General Plan

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

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

#### 1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

***Policy***

Policy 25: The County will promote the preservation of cultural and historic resources 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 N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be

accomplished through the established procedures for discretionary projects and CEQA documents.

Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

# 4.5.4 Impacts and Mitigation Measures

## Methodology

Impacts on cultural resources could result from ground-disturbing activities or damage, destruction, or alteration of historic structures. Ground-disturbing activities include project-related excavation, grading, trenching, vegetation clearance, operation of heavy equipment, or other surface and subsurface disturbance that could damage or destroy surficial or buried cultural resources, including prehistoric and historic-period archaeological resources and human burials. Based on previous cultural resources survey in the area, and the Project Proponent's site specific surveys (SWCA, 2017), the project site generally lacks known cultural resources. Specially, the cultural resource study found two isolated artifacts (one prehistoric and one historic-period) and no above-ground historic built environment resources. As such, there are no eligible historic or prehistoric resources within the project footprint. The methodology and results of this study are summarized below; for greater detail, see Appendix E of this EIR/EA.

## 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 15064.5;

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA *Guidelines* Section 15064.5; or

c. Disturb any human remains, including those interred outside of dedicated cemeteries.

These criteria are applicable to only the Kern County CEQA EIR analysis and are not applicable to the BLM NEPA EA analysis. In addition, significance determinations identified for the criteria above are applicable to only the Kern County CEQA EIR analysis and are not applicable to the BLM NEPA EA analysis.

All of the above impact thresholds are addressed below. Additional impacts to tribal cultural resources have been addressed in Section 4.16, *Tribal Cultural Resources*, of this EIR/EA.

# 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.

There are no identified historic architectural resources within or adjacent to the project site. A single historic-period isolate was identified as a result of the records search and field survey. Given their lack of context and association, isolated artifacts are not considered eligible for the CRHR. Therefore, no historical resources were identified within the site, and the project would not cause a substantial adverse change in the significance of known historical resources, pursuant to CEQA *Guidelines* Section 15064.5.

While no historical resources were identified within the project site, ground-disturbing activities associated with the project have the potential to encounter undocumented subsurface archaeological deposits that could qualify as historical resources. However, the cultural resources assessment (SWCA, 2017) notes that ground surface visibility was excellent throughout the project area. Thus, it is reasonable to assume that few artifacts were overlooked. Further, the report concludes that deep burial of archaeological resources is highly unlikely in the project area, and the absence of surficial artifacts strongly indicates a low possibility for buried archaeological resources. In the unlikely event that unknown archaeological resources qualifying as historical resources are discovered during project construction, significant impacts to these resources could occur. Mitigation Measures MM 4.5-1 and MM 4.5-2 would require cultural resources sensitivity training for construction workers and appropriate treatment of unearthed archaeological resources during construction. With implementation of these mitigation measures, impacts to historical resources would be less than significant.

# 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 and Bureau of Land Management (BLM) prior to the commencement of any construction activities on-site. Further, the Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project:

1. Prior to commencement of any ground-disturbing activities, the Lead Archaeologist shall conduct 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 to all personnel. A copy of the Cultural Resources Sensitivity Training Guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form. A copy of the proposed training materials shall be provided to the Planning and Natural Resources Department prior to the issuance of any grading or building permit.
2. The training shall include an overview of potential cultural resources that could be encountered during ground-disturbing activities to facilitate worker recognition,

avoidance, and subsequent immediate notification to the Lead Archaeologist for further evaluation and action, as appropriate, and of the penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.

3. The project proponent/operator shall ensure all employees or onsite workers who have not participated in earlier cultural resources sensitivity trainings shall meet the provisions specified above.
4. A copy of the Cultural Resources Sensitivity Training Guide/Materials shall be kept on-site and available for all personnel to review and be familiar with as necessary. It is the responsibility of the Lead Archaeologist to ensure all employees receive appropriate training before the work on-site.

**MM 4.5-2:** In the event archaeological materials are encountered during any ground disturbing activities, including grading, construction and decommissioning, the project proponent/contractor shall cease any ground-disturbing activities. The services of an archaeological monitor working under the supervision of the Lead Archaeologist shall be retained by the project proponent/operator to monitor on a full-time basis, ground-disturbing activities associated with project-related activities, as follows:

1. All ground-disturbing activities within 50 feet of prehistoric archaeological sites shall be monitored.
2. For all other ground-disturbing activities within the project area, initial excavation or grading activities shall be monitored by archaeological monitors. During the course of this initial monitoring, if the qualified archaeologist can demonstrate that the level of monitoring should be reduced or discontinued, or if the qualified archaeologist can demonstrate a need for continuing monitoring, the qualified archaeologist, in consultation with the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM), may adjust the level of monitoring to circumstances as warranted. The area of the discovery shall be marked off by temporary fencing that encloses a 50-foot radius from the location of discovery or a radius determined by the Lead Archaeologist, as appropriate. Signs shall be posted that establish it as an Environmentally Sensitive Area until the discovery is assessed by the Lead Archaeologist. The Lead Archaeologist shall evaluate the significance of the resources and recommend appropriate treatment measures. If further treatment of the discovery is necessary, the Environmentally Sensitive Area may be reduced, depending on the nature of the find, but shall remain in place until all work is completed.
3. Per *California Environmental Quality Act (CEQA) Guidelines* Section 15126.4(b)(3), project redesign and preservation in place is the preferred means to avoid impacts to significant historical resources. Consistent with CEQA *Guidelines* Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the lead archaeologist shall develop additional treatment measures in consultation with the County, and the BLM if the resource occurs on federally owned land, which may include data recovery or other appropriate measures. The County, and the BLM if applicable, 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 representative, as required, 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, to the BLM, and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield.

4. The archaeological monitor shall keep daily logs and the Lead Archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the Lead Archaeologist shall prepare a monitoring report detailing the results of monitoring, which shall be submitted to the Kern County Planning and Natural Resources Department, BLM and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2, impacts would be less than significant.

### Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource, as defined in CEQA Guidelines Section 15064.5.

Two isolated artifacts (one historic-period and one prehistoric) were identified within the project site. Neither constitutes a unique archaeological resource as defined in CEQA *Guidelines* Section 15064.5. Therefore, the project would not result in a substantial adverse change in the significance of known archaeological resources.

While no significant archaeological resources were identified, ground-disturbing activities associated with the project would have the potential to encounter undocumented archaeological resources. However, the cultural resources assessment (SWCA, 2017) notes that ground surface visibility was excellent throughout the project area. Thus, it is reasonable to assume that few artifacts were overlooked. Further, the report concludes that deep burial of archaeological resources is highly unlikely in the project area, and the absence of surficial artifacts strongly indicates a low possibility for buried archaeological resources. In the unlikely event that unknown archaeological resources are discovered during project construction, significant impacts to these resources could occur. Mitigation Measures MM 4.5-1 and MM 4.5-2 would require cultural resources sensitivity training for construction workers and appropriate treatment of unearthed archaeological resources during construction. With implementation of mitigation measures, impacts to archaeological resources would be less than significant.

## Mitigation Measures

Implementation of Mitigation Measures MM 4.5-1 and 4.5-2 would be required.

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2, impacts would be less than significant.

### Impact 4.5-3: The project would not disturb any human remains, including those interred outside of dedicated cemeteries.

There is no indication, either from the archival research or the cultural resources survey for the proposed project, 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 discovered during project construction activities, the remains could be inadvertently damaged, resulting in a significant impact. Implementation of Mitigation Measure MM 4.5-3 would ensure that any human remains encountered are appropriately addressed and that impacts would be less than significant.

## Mitigation Measures

**MM 4.5-3:** If human remains are uncovered during project construction on non-federally owned land, the project proponent/contractor shall immediately halt work, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.4 (e)(1) of the *California Environmental Quality Act Guidelines*. If the County coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply.

If human remains are uncovered during project construction on federally owned land, the BLM shall be notified. If it is determined that the remains are Native American, the BLM archaeologist will initiate the proper procedures under the Native American Graves Protection and Repatriation Act (NAGPRA). Reasonable and good faith efforts shall be made by the BLM to identify the appropriate Native American tribes, groups and individuals, or other ethnic groups and individuals related to the burial and consult with them concerning the treatment of the remains. Native American human remains, associated grave goods, or objects of cultural patrimony discovered on federal lands will be treated in accordance with the requirements of NAGPRA. Construction in the area of the find shall not resume until authorization has been given by the BLM.

## Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.5-3, impacts would be less than significant.

# Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts that the project, as discussed in Chapter 3, *Project Description*, would have on cultural resources. The geographic area of analysis for cultural resources includes the Antelope Valley. This geographic scope of analysis is appropriate because the archaeological and historical resources within this area are expected to be similar to those that occur on the project site because of their proximity, and because similar environments, landforms, and hydrology would result in similar land use and, thus, site types. 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 projects, and provides a reasonable context wherein cumulative actions could affect cultural resources.

Multiple projects, including solar energy production facilities, are proposed throughout the Antelope Valley. As large-scale energy projects and urbanization pressures increase within Kern County and Los Angeles County, impacts to cultural resources within the region are expanding on a cumulative level. As described in Table 3-5, *Cumulative Projects List*, in Chapter 3, *Project Description*, of this EIR, other projects with similar effects have been completed within the Antelope Valley. Cumulative impacts to 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. 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, the Project site has no known historical resources or significant archaeological resources, and mitigation measures are included in this EIR/EA to reduce potentially significant project impacts to cultural 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 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. Although project construction has the potential to disturb human remains, the implementation of Mitigation Measure MM 4.5-3 would ensure that the appropriate protocol is followed with regard to identifying and handling such remains.

With the implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3, as described above, the project would not result in significant impacts to cultural resources. Given this minimal impact and the requirement for similar mitigation for other projects in the Antelope Valley, cumulative impacts to cultural resources would be less than significant.

## Mitigation Measures

Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3 would be required.

## Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.5-1 through MM 4.5-3, cumulative impacts would be less than significant.

Section 4.6
**Energy**

## 4.6.1 Introduction

This energy section of the EIR/EA analyzes the energy implications of the proposed 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 proposed project's anticipated energy needs and conservation measures provided in the Energy Conservation Impact Assessment prepared by Ambient Air Quality and Noise Consulting, which is provided in Appendix F of this Draft EIR/EA. Information found herein, as well as other aspects of the proposed project's environmental-related energy impacts, are discussed in greater detail elsewhere in this Draft EIR/EA, including in Chapter 3, *Project Description*, and Section 4.3, *Air Quality*, and Section 4.8, *Greenhouse Gas Emissions*, of this EIR/EA.

This section provides the content and analysis required by Public Resources Code Section 21100(b)(3) and described in CEQA *Guidelines* Appendix F (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 wasteful, inefficient, and unnecessary consumption of energy. Appendix F of the CEQA *Guidelines* states that the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the proposed project. Appendix F of the CEQA *Guidelines* further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the Environmental Setting and Impact Analysis portions of EIR technical sections, as well as through mitigation measures and alternatives.

## 4.6.2 Environmental Setting

Californians consumed 290,567 gigawatt hours (GWh) of electricity in 2016, which is the most recent year for which data is available. Of this total, Kern County consumed 18,440 GWh (CEC, 2017a). In 2016, the California electricity mix included natural gas (33.67 percent), coal (4.13 percent), large hydroelectric plants (14.72 percent), nuclear (9.08 percent), oil (0.01 percent), petroleum coke/waste heat (0.14 percent) and unspecified sources of power (9.25 percent). The remaining 29 percent was supplied from renewable resources, such as wind, solar, geothermal, biomass, and small hydroelectric facilities (CEC, 2017b). In 2017, the state consumed 2,110,829 million cubic feet of natural gas.

Energy usage is typically quantified using the British Thermal Unit (BTU). Total energy usage in California was 7,830 trillion BTU in 2016 (the most recent year for which this specific data is available), which equates to an average of 199 million BTU per capita (EIA, 2017b). Of California's total energy usage, the breakdown by sector is 39 percent transportation, 24 percent industrial, 19 percent commercial, and 18 percent residential. Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial and industrial facilities, whereas petroleum consumption is generally accounted for by transportation-related uses. In 2017, taxable gasoline sales (including aviation gasoline) in California accounted for 15,540,154,774 gallons of gasoline.

# Electricity

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.

The project is located within the Southern California Edison (SCE) service territory. SCE updates all load forecasts for gas and electricity services every year. Load growth forecasts for this area are currently determined using load growth projection tools that use a number of sources of data, including past peak loading, population, development characteristics, and temperature history information. **Table 4.6-1,** *Electric Power Mix Delivered to Retail Customers in 2017*, shows the electric power mix that was delivered to retail customers for SCE compared to the statewide power mix for 2017, the most recent year in which data is available.

**TABLE 4.6-1: ELECTRIC POWER MIX DELIVERED TO RETAIL CUSTOMERS IN 2017**

| Energy Resource | 2017 SCE | 2017 CA Power Mix (for comparison) |
|---|---|---|
| **Total Sales/Total Usage (million kilowatt-hours)**[a] | **85,879** | **292,039** |
| **Eligible Renewable** | **32%**[a] | **29%** |
| Biomass & bio-waste[b] | 0% | 2.5% |
| Geothermal | 8% | 4.5% |
| Small hydroelectric | 1% | 3% |
| Solar | 13% | 10% |
| Wind | 10% | 9% |
| **Coal** | **0%** | **4%** |
| **Large Hydroelectric** | **8%** | **15%** |
| **Natural Gas** | **20%** | **34%** |
| **Nuclear** | **6%** | **9%** |
| **Other** | **0%** | **0%** |
| **Unspecified sources of power**[c] | **34%** | **9%** |
| **Total** | **100%** | **100%** |

a CEC, 2017.

b The Eligible Renewables category is further delineated into the specific sources: biomass & waste, geothermal, small hydroelectric, solar, and wind

c "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

SOURCES: CEC 2017, SCE 2017

As part of the SCE Integrated Resources Plan (IRP), which is conducted in conformance with Senate Bill 350, an analysis was conducted to fully evaluate various portfolio scenarios. As discussed therein, under both the SCE Pathways System Plan and the SCE Preferred Portfolio additional energy storage would be required after 2028 and 2029, respectively (SCE, 2017).

# Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs and delivered through high-pressure transmission pipelines. Natural gas provides almost one-third of the state's total energy requirements. Natural gas is measured in terms of cubic feet (cf).

The natural gas consumption in Kern County from 2007 to 2017 is shown in **Table 4.6-2,** *Natural Gas Consumption in Kern County 2007-2017*. Similar to energy consumption, natural gas consumption in Kern County remained relatively constant between 2007 and 2017, with no substantial increase during that period.

**TABLE 4.6-2: NATURAL GAS CONSUMPTION IN KERN COUNTY 2007-2017**

| Year | Natural Gas Consumption (in millions of therms) |
|---|---|
| 2007 | 2,636 |
| 2008 | 2,591 |
| 2009 | 2,497 |
| 2010 | 2,327 |
| 2011 | 2,376 |
| 2012 | 2,326 |
| 2013 | 2,697 |
| 2014 | 2,715 |
| 2015 | 2,762 |
| 2016 | 2,520 |
| 2017 | 2,397 |

SOURCE: CEC, Natural Gas Consumption by County, 2018

The CPUC regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins.

California's regulated utilities do not own any natural gas production facilities. All natural gas sold by these utilities must be purchased from suppliers or marketers. The price of natural gas sold by suppliers and marketers was deregulated by the Federal Energy Regulatory Commission in the mid-1980s and is determined by market forces. However, the CPUC decides whether California's utilities have taken reasonable steps to minimize the cost of natural gas purchased on behalf of its core customers (CPUC 2017).

As indicated in the preceding discussion, natural gas is available from a variety of in-state and out-of-state sources, and is provided throughout the state in response to market supply and demand. Complementing available natural gas resources, biogas may soon be available through existing delivery systems, thereby increasing the availability and reliability of resources.

### Existing Infrastructure

As previously discussed, the project is located within the SCE service territory. SCE obtains its energy supplies from power plants and natural gas fields in Northern California, as well as from energy purchased outside its service area and delivered through high-voltage transmission lines and pipelines. Electricity is generated from various sources, including fossil fuel, hydroelectric, nuclear, wind, and geothermal plants, and is fed into the electrical grid system serving Southern California.

Natural gas is provided to the project area by the Southern California Gas Company (SoCalGas), which is the principal distributor of natural gas in Southern and Central California, serving residential, commercial, and industrial markets. Gas supply available to SCE from California sources averaged 2,504 million cf per day in 2017 (SCE, 2017).

## Transportation

According to the California Energy Commission (CEC), transportation accounted for nearly 37 percent of California's total energy consumption in 2014. In 2016, California consumed 15.5 billion gallons of gasoline and 3.7 billion gallons of diesel fuel. Petroleum-based fuels currently account for more than 90 percent of California's transportation fuel use. However, the State is now working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gas (GHG) from the transportation sector, and reduce vehicle miles traveled (CEC, 2016). Accordingly, gasoline consumption in California has declined. The CEC predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels. According to fuel sales data from the CEC, fuel consumption in Kern County was approximately 390 million gallons of gasoline and 247 million gallons of diesel fuel in 2017 (CEC, 2017).

### Fuel Consumption

Automotive fuel consumption in Kern County from 2007 to 2019 is shown in **Table 4.6-3**, *Automotive Fuel Consumption in Kern County 2007-2019*, (projections for the year 2019 are also shown). As shown in Table 4.6-3, on-road automotive fuel consumption in Kern County has declined steadily from 2007, although consumption increased between 2014 and 2017. Heavy-duty vehicle fuel consumption has been increasing since 2012.

**TABLE 4.6-3: AUTOMOTIVE FUEL CONSUMPTION IN KERN COUNTY 2007-2019**

| Year | On-Road Automotive Fuel Consumption (Gallons) | Heavy-Duty Vehicle/Diesel Fuel Consumption (Gallons) |
|---|---|---|
| 2007 | 482,802,885 | 305,057,882 |
| 2008 | 467,282,258 | 275,614,151 |
| 2009 | 457,753,568 | 254,307,817 |
| 2010 | 459,769,506 | 255,617,083 |
| 2011 | 453,029,571 | 256,460,303 |
| 2012 | 452,705,414 | 256,810,320 |
| 2013 | 454,062,915 | 275,920,754 |
| 2014 | 458,973,481 | 281,393,333 |
| 2015 | 469,620,303 | 284,648,995 |
| 2016 | 476,390,995 | 301,260,345 |
| 2017 | 463,754,740 | 304,118,169 |
| 2018 | 454,207,143 | 308,064,466 |
| 2019 (projected) | 445,151,657 | 311,403,744 |

SOURCE: SCEDC 2018

# 4.6.3 Regulatory Setting

## Federal

Federal, state, and local agencies regulate energy use and consumption through various means and programs. On the federal level, the U.S. Department of Transportation, the U.S. Department of Energy, and the U.S. Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the CPUC and CEC are two agencies with authority over different aspects of energy. Relevant federal, state, and local energy-related regulations are summarized below.

### Corporate Average Fuel Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and United States Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. USEPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA, 2012b).

### *National Energy Policy and Conservation Act*

The National Energy Conservation Policy Act serves as the underlying authority for Federal energy management goals and requirements. Signed into law in 1975, it has been regularly updated and amended by subsequent laws and regulations. Pursuant to the Act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

### *Energy Policy Act of 2005*

The Energy Policy Act of 2005 sets equipment energy efficiency standards and seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under the Act, consumers and businesses can attain Federal tax credits for purchasing fuel-efficient appliances and products, including hybrid vehicles; constructing energy-efficient buildings; and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary micro-turbine power plants, and solar power equipment.

### *Energy and Independence Security Act of 2007*

The Energy and Independence Security Act of 2007 (EISA) sets Federal energy management requirements in several areas, including energy reduction goals for Federal buildings, facility management and benchmarking, performance and standards for new buildings and major renovations, high-performance buildings, energy savings performance contracts, metering, energy-efficient product procurement, and reduction in petroleum use and increase in alternative fuel use. This Act also amends portions of the National Energy Policy and Conservation Act. In addition to setting increased Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

Renewable Fuel Standard (RFS) (Section 202)

Appliance and Lighting Efficiency Standards (Sections 301–325)

Building Energy Efficiency (Sections 411–441)

# State

## *Assembly Bill (AB) 32 Senate Bill 32*

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "California Global Warming Solutions Act of 2006." AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels; the same requirement as under S-3-05), and requires CARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Reductions in overall energy consumption have been implemented to reduce emissions. See Section 4.8, Greenhouse Gas Emissions, for a further discussion of AB 32.

In September 2016, the Governor signed into legislation SB 32, which builds on AB 32 and requires the state to cut GHG emissions to 40 percent below 1990 levels by 2030. With SB 32, the Legislature also passed AB 197, which provides additional direction for updating the Scoping Plan to meet the 2030 GHG reduction target codified in SB 32. CARB has published a draft update to the Scoping Plan and has received public comments on this draft, but has not released the final version.

Additional energy efficiency measures beyond the current regulations are needed to meet these goals as well as the AB 32 greenhouse gas (GHG) reduction goal of reducing statewide GHG emissions to 1990 levels by 2020 and the SB 32 goal of 40 percent below 1990 levels by 2030 (see Section 4.8, Greenhouse Gas Emissions, for a discussion of AB 32 and SB 32). Part of the effort in meeting California's long-term reduction goals include reducing petroleum use in cars and trucks by 50 percent, increasing from one-third to more than one-half of California's electricity derived from renewable sources, doubling the efficiency savings achieved at existing buildings and making heating fuels cleaner; reducing the release of methane, black carbon, and other short-lived climate pollutants, and managing farm and rangelands, forests, and wetlands so they can store carbon.

## *2008 California Energy Action Plan Update*

The 2008 Energy Action Plan Update provides a status update to the 2005 Energy Action Plan II, which is the State's principal energy planning and policy document (CPUC and CEC, 2008). The plan continues the goals of the original Energy Action Plan, describes a coordinated implementation plan for State energy policies, and identifies specific action areas to ensure that California's energy is adequate, affordable, technologically advanced, and environmentally sound. First-priority actions to address California's increasing energy demands are energy efficiency, demand response (i.e., reduction of customer energy usage during peak periods in order to address system reliability and support the best use of energy infrastructure), and the use of renewable sources of power. If these actions are unable to satisfy the increasing energy and capacity needs, the plan supports clean and efficient fossil-fired generation.

## *California Buildings Standards*

### Senate Bill 1078 and 107; Executive Order S-14-08, S-21-09, and SB 2X

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable

sources by 2017. SB 107 (Chapter 464, Statutes of 2006) accelerated the due date of the 20 percent mandate to 2010 instead of 2017. These mandates apply directly to investor-owned utilities. In November 2008, then-Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Portfolio Standard to 33 percent renewable power by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the Renewable Portfolio Standard by signing Executive Order S-21-09, which directs the CARB under its AB 32 authority to enact regulations to help the state meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SBX1-2 (2011) codified the 33 percent by 2020 goal.

### Executive Order B-30-15; Senate Bill 100 and 350

In April 2015, the Governor issued Executive Order B-30-15, which established a GHG reduction target of 40 percent below 1990 levels by 2030. SB 350 (Chapter 547, Statutes of 2015) advanced these goals through two measures. First, the law increases the renewable power goal from 33 percent renewables by 2020 to 50 percent by 2030. Second, the law requires the CEC to establish annual targets to double energy efficiency in buildings by 2030. The law also requires the California Public Utilities Commission (CPUC) to direct electric utilities to establish annual efficiency targets and implement demand-reduction measures to achieve this goal. In 2018, SB 100 revised the goal of the program to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

## Senate Bill 1389

Senate Bill (SB) 1389 (Public Resources Code Sections 25300–25323; SB 1389) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protects the environment; ensures reliable, secure, and diverse energy supplies; enhances the state's economy; and protects public health and safety (Public Resources Code Section 25301[a]). The 2016 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California, including energy efficiency, strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan, building energy efficiency standards, the impact of drought on California's energy system, achieving 50 percent renewables by 2030, the California Energy Demand Forecast, the Natural Gas Outlook, the Transportation Energy Demand Forecast, Alternative and Renewable Fuel and Vehicle Technology Program benefits updates, update on electricity infrastructure in Southern California, update on trends in California's sources of crude oil, update on California's nuclear plants, and other energy issues.

## California's Renewables Portfolio Standard

First established in 2002 under SB 1078, California's Renewables Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030 (CPUC, 2018).

In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that the California Air Resources

Board (CARB) should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy. The project would be a RPS-eligible facility. Refer to Section 4.7, *Greenhouse Gas Emissions*, of this Draft EIR/EA 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 $CO_2$ emissions, Assembly Bill (AB) 1493 (commonly referred to as CARB's Pavley regulations), enacted in 2002, requires CARB to set GHG emission standards for new passenger vehicles, light-duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009–2016 and Phase II established standards for model years 2017–2025.' Refer to Section 4.7, *Greenhouse Gas Emissions*, of this Draft EIR/EA for additional details regarding this regulation (CARB, 2017c).

## California Health and Safety Code (HSC), Division 25.5/California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32 (codified in the California HSC, Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. Under HSC Division 25.5, CARB has the primary responsibility for reducing the state's GHG emissions; however, AB 32 also tasked the CEC and the CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

In 2016, SB 32 and its companion bill AB 197 amended HSC Division 25.5 and established a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and included provisions to ensure that the benefits of state climate policies reach into disadvantaged communities. Refer to Section 4.7, *Greenhouse Gas Emissions*, of this Draft EIR/EA 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 (ZEV) regulations to require manufactures to produce an increasing number of pure ZEVs (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEVs) 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 5 minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

## *Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles*

In addition to limiting exhaust from idling trucks, in 2008 CARB approved the Truck and Bus regulation to reduce $NO_X$, $PM_{10}$, and $PM_{2.5}$ emissions from existing diesel vehicles operating in California (13 CCR, Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. The phasing of this regulation has full implementation by 2023.

CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower, such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

## California Environmental Quality Act

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 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 for 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 the Appendix G Checklist, 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.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

In accordance with CEQA and Appendix F, Energy Conservation, of the 2018 CEQA *Guidelines*, and to ensure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the CEQA *Guidelines* provides a list of energy-related topics to be analyzed in the EIR. In addition, while not described or required as significance thresholds for determining the significance of impacts related to energy, Appendix F provides the following topics for consideration in the discussion of energy use in an EIR, to the extent the topics are applicable or relevant to the proposed project:

> The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the proposed project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
>
> The effects of the proposed project on local and regional energy supplies and on requirements for additional capacity.
>
> The effects of the proposed project on peak and base period demands for electricity and other forms of energy.
>
> The degree to which the proposed project complies with existing energy standards.
>
> The effects of the proposed project on energy resources.
>
> The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

# Local

## Kern County General Plan

The Kern County General Plan Energy Element primarily discusses the County's wealth of existing and potential energy resources which include oil, natural gas, and electricity producer. The goals, policies, and implementation measures in the Energy Element of the Kern County General Plan applicable to the proposed project are provided below. The Kern County General Plan contains additional policies, goals,

and implementation measures that are more general in nature and not specific to development such as the proposed project. Those measures are not listed below.

### *Chapter 5. Energy Element*

#### 5.4.5 Solar Energy Development

***Goal***

Goal 1: Encourage safe and orderly commercial solar development.

***Policies***

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

# 4.6.4 Impacts and Mitigation Measures

## Methodology

This analysis addresses the proposed 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 Conservation Impact Assessment report prepared for the proposed project. A full copy of the report is provided in Appendix F of this Draft EIR/EA.

## Construction

Regarding energy use (e.g., fuel use) during construction, it is assumed that only diesel fuel would be used in off-road construction equipment. On-road vehicles for construction workers and delivery trips are assumed to be solely powered by gasoline. Construction activity durations (refer to Table 1), off-road equipment (refer to Table 2 of the Energy Conservation Impact Assessment in Appendix F), horsepower ratings, hours of use, and load factors were used to calculate construction-related fuel use, provided by the project applicant and default assumptions from California Emissions Estimator Model (CalEEMod), version 2016.3.1. The diesel fuel usage rate was based on a factor of 0.05 gallons of diesel fuel per horsepower-hour derived from the South Coast Air Quality Management District's (SCAQMD's) *CEQA Air Quality Handbook* (SCAQMD, 1993). For comparison purposes, fuel use was also converted to million British Thermal Units (MMBTU). A BTU is a traditional unit of measure used to define the amount of heat content of fuels and energy sources. Refer to Appendix F for modeling assumptions and results. On-road vehicle use assumed a one-way trip distance of 51 miles for workers and delivery trips. The trip distance was quantified based on the average distances to nearby communities assuming that 40 percent of the worker trips would come from the Palmdale/Lancaster area, 20 percent from the Santa Clarita/northern Los Angeles area, 20 percent from the Bakersfield metropolitan area, and 20 percent from the nearby

communities of Mojave, Tehachapi, and Rosamond. Haul truck trips for the transport of equipment and solar structural and module components were quantified assuming an in-Basin travel distance of 51 miles/trip, based on the assumption that all materials would be imported through a western seaport (e.g., Port of Los Angeles/Long Beach complex).

## Operation

Operational energy usage includes worker trips, haul truck trips, and facility maintenance associated with occasional washing of solar panels. It is expected that daily maintenance and operation workers travel 2.5-miles round trip; these workers would come from existing staff at the maintenance and operations facility located adjacent to the Manzana substation. Furthermore, occasional washing of the solar panels assumes 5-mile round trips for workers and a 15-mile round trip for haul trucks. Transportation fuel-use estimates were calculated by vehicle miles traveled, vehicle fleet mix, and average fuel usage rates obtained from CARB's Emissions Factors (EMFAC) 2017 model, version 1.0.2. Solar panel washing would require the use of two pressure washers operating 8 hours per day, up to 9 days/year. Energy use for the pumping of water assumed an electricity intensity factor of 2,117 kWh/Mgal, based on CalEEMod defaults for southern Kern County. For comparison purposes, fuel use was also converted to MMBTU. Refer to Appendix F for modeling assumptions and results.

# Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, per Appendix G of the CEQA *Guidelines*, to determine if a project could potentially have a significant impact. Appendix F of the CEQA *Guidelines* does not prescribe a threshold for the determination of significance, but focuses on reducing and minimizing inefficient wasteful and unnecessary consumption of energy. The proposed project would have a significant impact on energy and energy resources if it would:

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The analysis below generally follows Appendix F of the CEQA *Guidelines*, which states that the goal of conserving energy includes decreasing overall per capita energy consumption; decreasing reliance on fossil fuels such as coal, natural gas, and oil; and increasing reliance on renewable energy.

## Impact Assessment Methodology

In determining whether implementation of the project would result in the inefficient, wasteful or unnecessary consumption of fuel or energy, this analysis considers the recommendations of Appendix F of the CEQA *Guidelines* (as described above), which states that environmental impact analyses of energy conservation may include:

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the proposed project's life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.

2. The effects of the proposed project on local and regional energy supplies and on requirements for additional capacity.
3. The degree to which the proposed project complies with existing energy standards.
4. The effects of the proposed project on energy resources.
5. The proposed project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

This section analyzes energy consumption on three sources of energy that are relevant to the proposed project: electricity, natural gas, and transportation fuel for vehicle trips associated with new development, as well as the fuel necessary for project construction.

The analysis of project electricity/natural gas usage is based on California Emissions Estimator Model (CalEEMod) modeling, which quantifies energy use for occupancy. The results of the CalEEMod modeling are included in Appendix C (Air Quality and GHG Data) of this Draft EIR.

Modeling related to transportation fuel consumption was based primarily on the default settings in the computer program for Kern County. The amount of operational fuel use was estimated using CalEEMod outputs for the proposed Project and the California Air Resources Board's Emissions Factor 2017 (EMFAC2017) computer program for typical daily fuel usage in Kern County. Construction fuel consumption was calculated based on CalEEMod emissions outputs and conversion ratios from the Climate Registry. The results of EMFAC2017 modeling and construction fuel estimates are included in Appendix C, Air Quality and GHG Data.

# Project Impacts

**Impact 4.6-1: The project would result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.**

## Construction (Short Term)

Construction and decommissioning of the new solar energy generation facility is expected to require the use of non-renewable resources in the form of diesel and gasoline to power off-road construction equipment and on-road vehicles. As shown in **Table 4.6-4**, *Project Construction Energy Usage*, construction activities are expected to consume approximately 124,994 gallons of diesel and 51,683 gallons of gasoline. The pumping of water used during project construction would total approximately 1,482,967 gallons per year, equating to 3,139 kWh of electricity from conveyance. 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 proposed 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*, would require the use of energy-efficient and alternatively-fueled equipment. Implementation of Mitigation Measure MM 4.3-1 would also ensure compliance with Title 13, CCR, Section 2449 et seq., which imposes construction equipment idling restrictions. Compliance with Title 13 would also help to reduce unnecessary fuel consumption during project construction. With mitigation, the proposed project

would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, and this impact would be less than significant**.**

**TABLE 4.6-4: PROJECT CONSTRUCTION ENERGY USAGE**

| Source | Annual Electricity Use (kWh) | Annual Diesel Fuel Use (gal) | Annual Gasoline Fuel Use (gal) |
|---|---|---|---|
| **SCE (2017)/Kern County (2017)[a]** | 85,879,000,000 | 247,000,000 | 390,000,000 |
| **Construction:** | | | |
| Heavy-Duty Construction Equipment | — | 124,994 | — |
| On-Road Vehicles | — | — | 51,683 |
| Water Conveyance | 3,139 | | |
| **% of County** | **<0.0001%** | **0.05%** | **0.01%** |

[a] California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2017. Available at: http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed February 2019. Diesel is adjusted to account for retail (51%) and non-retail (49%) diesel sales.

SOURCE: Ambient Consulting 2019

## Operation (Long Term)

Non-renewable energy resources would be consumed during operation of the proposed project. However, the consumption of these resources would be minimal and predominantly associated with worker commute trips and occasional panel washing activities. Energy use associated with long-term operational activities is summarized in **Table 4.6-5**, *Project Operational Energy Use*. As shown, operation of the proposed project would consume approximately 27 gallons of diesel fuel and 79 gallons of gasoline per year. In addition, the washing of solar panels is expected, and it would use approximately 1,201 gallons of water per year, which would result in the consumption of approximately 3 kWh/year of electricity.

**TABLE 4.6-5: PROJECT OPERATIONAL ELECTRICITY USAGE**

| Source | Annual Electricity Use (kWh) | Annual Diesel Fuel Use (gal) | Annual Gasoline Fuel Use (gal) |
|---|---|---|---|
| **SCE (2017)/Kern County (2017)[a]** | **85,879,000,000** | **247,000,000** | **390,000,000** |
| **Operations:** | | | |
| On-Road Vehicles | — | 27 | 79 |
| Water Conveyance | 3 | — | — |
| Renewable Energy Produced | 132,032,000 | | |

[a] California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2017. Available at: http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html. Accessed February 2019. Diesel is adjusted to account for retail (51%) and non-retail (49%) diesel sales.

SOURCE: Ambient Consulting 2019

### Petroleum Fuel

The gasoline and diesel usage associated with on-road vehicular trips is calculated based on the vehicle miles traveled, vehicle fleet mix, and average fuel usage rates obtained from CARB's EMFAC2017 model. As summarized in Table 4-6-4, *Project Operational Electricity Usage*, the total gasoline consumption associated with on-road trips would be approximately 79 gallons per year and total diesel consumption associated with on-road trips would be approximately 27 gallons per year, respectively.

### Electricity Usage

The electricity usage associated with operation of the proposed Project is based on the electricity needed to pump water to the site for panel washing and other maintenance activities. The calculated volume of water required was then multiplied by an electricity intensity factor of 2,117 kWh per million gallons, based on CalEEMod defaults for southern Kern County. As summarized in Table 4.6-5, *Project Operational Electricity Usage*, 3 kwh per year.

As shown in Table 4.6-3, the proposed project would result in net negative electricity consumption. The project would generate 44 MW of electricity at any one time, and would result in the generation of 132,032,000 kWh of renewable energy annually, up to an expected operational lifetime of approximately 35 years. This electricity generation would assist State investor-owned utilities in meeting their obligations under State RPS guidelines by providing a renewable energy alternative to the utilities' existing power mix. Therefore, since the proposed project's electricity use is completely offset by the power it generates, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of electricity and impacts would be less than significant. Operation of the proposed project would not result in any natural gas consumption on the site. The project includes a solar array and battery storage station that would not require heating from natural gas. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of natural gas, and impacts would be less than significant.

Also as shown in Table 4.6-5, the proposed project would result in 27 gallons of diesel and 79 gallons of gasoline per year, representing a fraction of a percent of the County's annual diesel and gasoline use, respectively. As stated in Section 4-15, *Transportation and Traffic*, trips to the project site would be minimal and panel cleaning would happen up to 9 days per year but would only be cleaned on an as-needed basis. Based on the minimal number of trips, the negligible fuel use, and the cleaning of panels on an as-needed basis, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of transportation fuels and impacts would be less than significant.

## *Mitigation Measures*

Implementation of Mitigation Measure MM 4.3-1 would be required.

## *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.

At the time of this writing, Kern County does not have an adopted Energy Plan. Kern County does have an Energy Element in their General Plan, but focuses primarily on the County's energy resources and

municipal measures such as encouraging the County to seek State and federal energy grants, have discussions with various energy industries, and develop long-term compensation for wildlife habitat, to name a few. The proposed project design conforms to, and operation would comply with, USEPA and NHSTA efficiency standards during construction of the proposed project, as discussed further below, and with the California's RPS Program with completion of the proposed project.

### *Construction*

Construction equipment would comply with federal, state, and regional requirements where applicable. With respect to truck fleet operators, the USEPA and NHSTA have adopted fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and will result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. The USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type. The energy modeling for trucks does not take into account specific fuel reductions from these regulations, since they would apply to fleets as they incorporate newer trucks meeting the regulatory standards; however, these regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with CARB regulations regarding heavy-duty truck idling limits of 5 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 Scoping Plan relies on achievement of the 33 percent RPS by 2020 and 50 percent by 2030. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the proposed 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 132,032,000 kWh of renewable electricity annually.

Furthermore, as the proposed project would have an electric power generating capacity of approximately 44 MW alternating current (MW-AC), the project would be consistent with the Attorney General's recommended measures to reduce GHG emissions. Specifically, the proposed 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 proposed project would be compliant with the Attorney General's Recommended Measure regarding renewable energy. Because the proposed project is below regional regulatory thresholds and could result in a reduction of GHG emissions, no mitigation measures are required.

Overall, because the main objectives of the proposed 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 proposed project would be compliant with the applicable recommended actions of the CARB Scoping Plan, as well as applicable federal, state, and local policies. Specifically, the proposed 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.

The proposed project would not conflict with or obstruct the implementation of any State or local plan for renewable or energy efficiency. Implementation of the proposed project would not conflict with existing energy standards, including standards for energy conservation. Development of the proposed project would not cause inefficient, wasteful or unnecessary energy use, and impacts would be less than significant. Therefore, the proposed project would not conflict with or obstruct state or regional plans and impacts would be less than significant.

## Mitigation Measures

No mitigation measures are 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 proposed project are significant when combined with similar impacts from other past, present, or reasonably foreseeable projects in a similar geographic area. As presented in Chapter 3.0, *Project Description*, of this EIR/EA, Table 3-5, there are 17 related projects located within the vicinity of the project site. The geographic context for the analysis of cumulative impacts on electricity and natural gas is SCE's service area because the proposed project and related projects are located within the service boundaries of SCE.

Cumulative projects in the project area listed in Table 3-5, *Cumulative Projects List*, in Chapter 3, *Project Description*, largely consist of utility-scale solar power generation facilities. The nature of these projects is such that, like the proposed project, they would be consistent with the strategies of the CARB Climate Change Scoping Plan. To meet the AB 32 GHG emissions reduction mandate, the Scoping Plan relies on achievement of the RPS target of 33 percent of California's energy coming from renewable sources by 2020. In order to meet the SB 32 GHG emissions reduction mandate, the 2017 Scoping Plan relies on achievement of the RPS target of 60 percent of California's energy coming from renewable sources by 2030 and 100 percent renewable sources by 2045. The project and other similar projects are essential to achieving the RPS.

The main contribution of energy consumption from the proposed project would be from construction equipment usage during the construction phase and motor vehicles trips by employees during project operations. 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 proposed project would result in a contribution to cumulative energy consumption in California, construction of the project would implement Mitigation Measure 4.3-1, as provided in Section 4.3, *Air Quality*, which would require the use of energy-efficient and alternatively-fueled equipment during project construction. In addition, operation of the project could offset emissions from the electricity generation sector estimated at over 4,621,120 MWh (132,032 MWh annually) over its 35-year lifespan. As stated above, a majority of the related projects are solar or wind farms that would have similar energy use that would be offset by renewable energy generation and would have minimal operational trips to and from the sites. Overall, the proposed project clearly would not contribute to cumulative energy consumption in California because operation of the proposed project would provide electric power with negligible operational energy consumption over the long term when compared to traditional fossil-fueled generation technologies. Thus, the proposed 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 (see Section 4.3, *Air Quality*, of this EIR/EA) would be required.

## Level of Significance

With implementation of Mitigation Measure MM 4.3-1, cumulative impacts would be less than significant.

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Section 4.7
# Geology and Soils

## 4.7.1 Introduction

This section of the EIR/EA describes the geologic and soil characteristics of the project site, potential impacts to geology and soils associated with construction and operation of the proposed project, and mitigation measures that would reduce these impacts where applicable. The analysis in this section is largely based on information from the California Environmental Quality Act (CEQA)-level *Desktop Study* (Barr 2017) and the cultural resources assessment (SWCA 2017). These reports are included in Appendix G and Appendix E, respectively, of this EIR/EA.

## 4.7.2 Environmental Setting

### Regional Geologic Conditions

The proposed project is located on the western portion of the Mojave Desert Geomorphic Province (Province), which is characterized by broad expanses of desert with localized mountains and dry lakebeds. The Province is bounded by the Garlock Fault to the north, the Basin and Range Province to the east, the San Bernardino Mountains and the Pinto Fault to the south, and the San Andreas Fault to the west. The major faults within the region are the Garlock and San Andreas Faults, which are located approximately 2 miles north of the proposed project, and approximately 8 miles to the south, respectively (Barr 2017).

#### *San Andreas Fault*

According to the Southern California Earthquake Data Center (SCEDC), the San Andreas Fault is a right lateral, strike-slip fault that extends more than 700 miles from the Gulf of California to Cape Mendocino in northern California, a portion of which is located approximately 20 miles from the project site. The segment of the San Andreas Fault within Kern County is relatively short compared to its overall length. However, it remains an important fault because this segment breaks from the system's predominantly 350-degree trending direction between the San Luis Obispo County and Los Angeles County line. This is an active fault (displacement observed within the last 11,000 years) and capable of causing damage in the project area. Several historic earthquakes on the San Andreas Fault Zone have produced significant seismic shaking within the vicinity of the project site. The most notable example was on January 9, 1857, the Fort Tejon earthquake, one of the largest earthquakes ever recorded in the United States at an estimated magnitude of 7.9 (SCEDC, 2018b).

#### *Garlock Fault*

The Garlock Fault extends eastward from its point of intersection with the San Andreas Fault, near Lebec, for a distance of nearly 150 miles. The fault is located approximately 35 miles southeast of downtown Bakersfield and 2 miles north of the northern edge of the project site. At an approximately 2-mile distance, this is the closest fault to the project site. The Garlock Fault Zone is one of the most obvious geologic

features in southern California, clearly marking the northern boundary of the area known as the Mojave Block, as well as the southern ends of the Sierra Nevada Mountain Range and the valleys of the westernmost Basin and Range Province. While no earthquake has produced surface rupture (i.e., ground displacement) on the Garlock Fault in historic times, there have been a few sizable earthquakes recorded along the Garlock Fault Zone and it is considered capable of producing a damaging earthquake. The most recent was a maximum moment magnitude ($M_{max}$) 5.7 event near the town of Mojave on July 11, 1992. It was believed to have been triggered by the Landers earthquake just two weeks earlier. At least one section of the fault has displayed fault creep in recent years. The fault is considered active and areas along the fault have been designated by the State as Alquist-Priolo Earthquake Fault Zones (SCEDC, 2018c). Despite its proximity to the project site, the proposed project would not be located within any identified Alquist-Priolo Earthquake Fault Zone.

### *White Wolf Fault*

The White Wolf fault is an active, left lateral reverse fault located near the communities of Mettler, Arvin, Caliente, and Tehachapi. The Kern County Earthquake, the largest earthquake in southern California since the Fort Tejon Earthquake of 1857 and the Owens Valley earthquake of 1872, occurred on the White Wolf fault in 1952. The Mmax 7.5 Kern County earthquake caused an estimated $50 million in property damage. The fault is approximately 37 miles long, and the slip rate of the fault is estimated to be between 3 and 8.5 mm per year (SCEDC, 2018d). The White Wolf fault is considered capable of generating about a Mmax 7.3 earthquake. The White Wolf fault is located approximately 29 miles from the project site (SCEDC, 2018d).

### *Regional Seismicity*

Kern County is located in one of the more seismically active areas of California and may at any time be subject to moderate and severe ground shaking. Ground shaking occurs as a result of movement along a fracture zone that intermittently releases large amounts of energy during earthquakes. The proposed project is located within the Antelope Valley, where most of the faults trend to the northwest parallel to the San Andreas Fault Zone, and are cut off against the Garlock Fault, which trends to the northeast. The geologic units of the Antelope Valley are divided into consolidated non-water-bearing rocks and unconsolidated water-bearing deposits. Consolidated rocks underlie the unconsolidated deposits and are exposed in the Fairmont and Antelope Buttes. Their composition consists of igneous intrusive and metamorphic rocks of pre-Tertiary age, as well as basalt, continental volcanic and marine, and continental sedimentary rocks of Tertiary age. Unconsolidated deposits composed of alluvial deposits from surrounding mountain ranges to the north and northwest and also the area buttes form the alluvial plains in the site area.

## Paleontological Setting

Paleontological resources are the mineralized (fossilized) remains of prehistoric plants and animals and the mineralized impressions (trace fossils) left as indirect evidence of the form and activity of such organisms. These resources are generally located within sedimentary rocks or alluvium and are considered to be non-renewable.

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 or if defined as significant by project paleontologists, specialists, or local government agencies.

The majority of the project area is mapped as older Quaternary alluvium (Qoa), while a small section at the eastern-most margin is mapped as younger Quaternary alluvium (Qa). Older Quaternary alluvium dates to the Pleistocene (10,000 years–2.6 million years ago) and consists of poorly bedded alluvial gravel and sand. Younger Quaternary alluvium dates to the Holocene (recent–10,000 years ago) and consists of alluvial silt, sand, and gravel (SWCA 2017). Older Quaternary alluvial deposits have produced numerous fossil finds throughout the Mojave Desert and are considered to have high sensitivity. Due to their age, younger Quaternary alluvium sediments are too young to preserve fossil resources and have low paleontological sensitivity. However, younger Quaternary alluvium sediments typically overlie the highly sensitive older Quaternary alluvium, and so ground-disturbing activities that exceed the depth of the younger sediments are at risk of impacting fossils that may be present in these deeper, sensitive sediments. The depth of the younger Quaternary alluvium has not been determined in the project site.

# Local Geologic Setting

## *Soils and Topography*

The United States Department of Agriculture (USDA) Soil Conservation Service, National Cooperative Soil Survey classifies soils throughout the country. According to the geotechnical report, the USDA soil units identified on the project site include the Arizo gravelly loamy sand, Cajon loamy sand, Hanford coarse sandy loam and gravelly sandy loam, and Ramona sandy loam (Barr 2017). These soils are well drained or excessively drained loams with moderate to high infiltration rates.

As noted above, surficial deposits consist primarily of Quaternary alluvial deposits from coalescing alluvial fans extending out from the upper mountain regions to the north and northwest. The alluvial deposits generally consist of coarse sand, gravel, and cobble alluvial fan deposits that range from tens to hundreds of feet thick in the upper northern region of the site and thicken toward the south (Barr 2017). The alluvium tends to be coarse in drainage channels and areas closer to the mountains that become finer grained away from the channels and at the lower end of the alluvial fans. The project site is located largely between the Tylerhorse and Cottonwood Faults. The Tylerhorse Fault has been mapped just north of the site, and the Cottonwood Fault is southwest of the site and crosses the southern extension of the project site (Barr 2017). Both of these faults are not considered active (no evidence of displacement in the last 11,000 years) and are mapped as Quaternary age faults (last displacement has occurred between 700,000 and 1.6 million years ago).

# Geologic Hazards

## Fault Rupture

Ground surface rupture occurs along an earthquake fault when movement on a fault deep within the earth breaks through to the surface; rupture may cause damage to aboveground infrastructure and other features. Fault rupture is most likely to occur along the surface expression of identified traces of active faults. Rupture can occur slowly in the form of fault creep, which is known as a continuous fault split of the earth's crust that is not related to a seismic event. Rupture may also occur suddenly during an earthquake; sudden displacements are more damaging to structures than fault creep because they are accompanied by shaking. The State of California has mapped known active faults that may cause surface fault rupture in inhabited areas of the Alquist-Priolo Earthquake Fault Zoning Act. The project site is not located within or near an Earthquake Fault Zone regulated under the Alquist-Priolo Earthquake Fault Zoning act, as shown in **Figure 4.7-1**, *Regional Faults* (Jennings 2010). The nearest active fault to the project site is the Garlock Fault, which is approximately 2 miles north.

## Ground Shaking

The Southern California region is characterized by, and has a history of, fault stress and associated seismic activity including ground shaking, which can result in damage associated with ground lurching, structural damage, and liquefaction. During a seismic event, the project site may be subjected to high levels of ground shaking due to its proximity to active faults in the area. The type and magnitude of seismic hazards affecting the project site is dependent on the distance to causative faults, the intensity, and the magnitude of the seismic event. Earthquakes are classified by their magnitude, which is a measure of the amount of energy released during an event that can suggest how much ground shaking it would generate. **Table 4.7-1**, *Probable Earthquake Magnitudes for Regional Faults,* indicates the distance of the fault zones from the proposed project and the associated probable earthquake magnitude (in Moment Magnitude ($M_w$), an expression of realized magnitude) that can be produced by nearby seismic events. The Garlock Fault, which is located approximately 2 miles from the project site, could have the most significant effect from a design standpoint, due to its proximity and history. Other nearby active faults include San Andreas Fault Zone and the White Wolf Fault.

**TABLE 4.7-1: PROBABLE EARTHQUAKE MAGNITUDES FOR REGIONAL FAULTS**

| Earthquake (Fault) | Approximate Distance to Proposed Project (miles) | Probable Earthquake Magnitude (Moment Magnitude $M_w$) |
|---|---|---|
| Garlock Fault Zone | 2 | 6.8–7.6 |
| San Andreas Fault Zone | 8 | 6.8–8.0 |
| White Wolf Fault | 20 | 6.5–7.5 |

SOURCE: SCEDC 2018

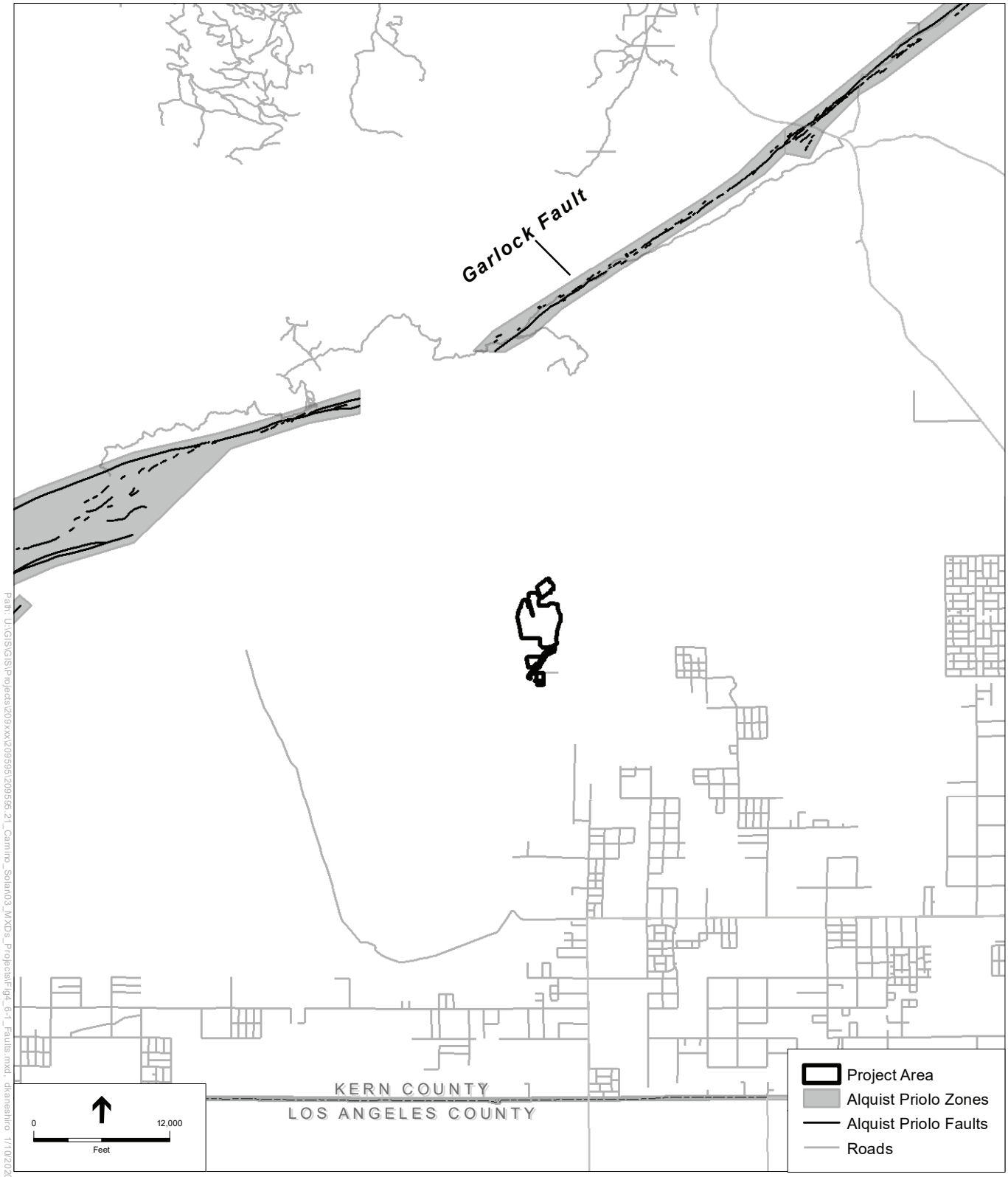


**Figure 4.7-1: REGIONAL FAULTS**

A common measure of ground motion is the peak ground acceleration (PGA). The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. In terms of automobile accelerations, 1 "g" of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds. The calculated mean PGA for the project site is approximately 0.4g to 0.5g, which is capable of causing substantive groundshaking, and has a 10 percent probability of being exceeded in 50 years (Barr 2017). For comparison purposes, the 1994 Northridge earthquake produced PGA values near the epicenter that approached 1g and caused widespread damage.

### *Liquefaction*

Liquefaction generally occurs when an area is underlain by loose, sandy soil with a groundwater table higher than 50 feet below ground surface, or when soils are completely saturated. Liquefaction usually results in horizontal and vertical movement of soils from lateral spreading (i.e., lateral displacement of soils on exposed slopes) of liquefied materials and post-earthquake settlement of liquefied materials. Based on measurements of nearby California Department of Water Resources monitoring wells, the historical high groundwater is on the order of 150 to 350 feet below the ground surface around the project site. Based on the anticipated depth to groundwater, the potential for liquefaction at the project site is considered unlikely (Barr 2017).

### *Expansive Soils*

Expansive soils are characterized by their potential "shrink-swell" behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the process of wetting and drying. Clay minerals such as smectite, bentonite, montmorillonite, beidellite, vermiculite, and others are known to expand with changes in moisture content. The higher the percentage of expansive minerals present in near surface soils, the higher the potential for significant expansion. The greatest effects occur when there are significant or repeated moisture content changes. Expansions of 10 percent or more in volume are not uncommon. This change in volume can exert enough force on a building or other structure to cause cracked foundations, floors and basement walls. Damage to the upper floors of the building can also occur when movement in the foundation is significant. Structural damage typically occurs over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils.

### *Soil Erosion*

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 underground water. 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. As noted above, surficial deposits consist primarily of alluvial deposits including coarse sand, gravel, and cobbles. In general, finer grained materials are more susceptible to erosion which is why the alluvium tends to be coarse in drainage channels whereas areas closer to the mountains become finer grained away from the channels and at the lower end of the alluvial fans.

### *Settlement of Soils*

Settlement can occur from immediate settlement, consolidation, shrinkage of expansive soil, and liquefaction (discussed below). Immediate settlement occurs when a load from a structure or placement of new fill material is applied, causing distortion in the underlying materials. This settlement occurs quickly and is typically complete after placement of the final load. Consolidation settlement occurs in saturated clay from the volume change caused by squeezing out water from the pore spaces. Consolidation occurs over a period of time and is followed by secondary compression, which is a continued change in void ratio under the continued application of the load.

Soils tend to settle at different rates and by varying amounts depending on the load weight or changes in properties over an area, which is referred to as differential settlement. The project site is underlain by young alluvium on the eastern part of the site and older alluvium for the rest of the site. Mapped soil units at the site include (Barr 2017):

Arizo gravelly loamy sand

Cajon loamy sand

Hanford coarse sandy loam

Hanford gravelly sandy loam

Ramona sandy loam

In addition, according to the preliminary geotechnical study, the likelihood of collapsible soils to be present at the site is considered high, which could lead to uneven settlement (Barr 2017)

## 4.7.3 Regulatory Setting

Geological resources and geotechnical hazards are governed primarily by local jurisdictions. The conservation elements and seismic safety elements of city and county general plans contain policies for the protection of geologic features and avoidance of hazards.

CEQA is a major environmental statue 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 operator must comply with other applicable federal, State and local statutes, regulations and policies. Relevant and potently relevant statutes, regulations and policies are discussed below.

## Federal

### Clean Water Act (Erosion Control)

The federal Clean Water Act (CWA) (33 U.S.C. 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 (General Permit), Order No. 2009-0009-DWQ. The General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which includes best management practices (BMPs) to regulate stormwater runoff, including measures to prevent soil erosion. Requirements of the CWA and associated SWPPP are described in further detail in Section 4.10, *Hydrology and Water Quality*.

### *Earthquake Hazards Reduction Act*

The Earthquake Hazards Reduction Act was enacted in 1977 to *"reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program."* To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by NEHRP, which refined the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the proposed 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 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 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 July 2016, and took effect starting January 1, 2017. The 2019 CBC is anticipated to become effective January 1, 2020. The 2016 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-16, *Minimum Design Loads for Buildings and Other Structures*, 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 PGA 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.

# 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 geologic hazards and/or the protection of unique geologic features, as well as policies for the preservation of paleontological resources. The policies, goals, and implementation measures in the Kern County General Plan for geology and soils that are applicable to the proposed project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the proposed project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, of this EIR/EA, 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.

### 1.10.3 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*

### 4.1 Introduction

***Goal***

Goal 1: Minimize injuries and loss of life and reduce property damage.

### 4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

***Policy***

Policy 1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

***Implementation 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 1: Determine the liquefaction potential at sites in areas of shallow groundwater (Map Code 2.3) prior to discretionary development and determine specific mitigation to be incorporated into the foundation design, as necessary, to prevent or reduce damage from liquefaction in an earthquake.

Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

## Kern County Code of Building Regulations (Title 17 of the Ordinance code of Kern County)

All construction in Kern County is required to conform to the Kern County Building Code (Chapter 17.08, Building Code, of the Kern County Code of Regulations). Kern County has adopted the CBC, 2013 Edition, with some modifications and amendments. The entire County is in Seismic Zone 4, a designation previously used in the Uniform Building Code to denote the areas of highest risk for earthquake ground motion. California has an unreinforced masonry program that details seismic safety requirements for Zone 4. Seismic provisions associated with Seismic Zone 4 have been adopted.

### *Chapter 17.28. Kern County Grading Code*

The purpose of the Kern County Grading Code is to safeguard life, limb, property, and the public welfare by regulating excavation, grading, earthwork construction, including fills and embankments; on private property. All requirements of the Kern County Grading Code would be applied during implementation of the proposed project. All required grading permit(s) would be obtained prior to commencement of construction activities. Sections of the Grading Code that are particularly relevant to geology and soils are provided below.

### *Section 17.28.140. 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 National Pollutant Discharge Elimination System Program

As closed systems never contacting the ocean, many of the waters within Kern County are technically not subject to protective regulations under the federal NPDES Program. The Kern County NPDES Program serves as a regulatory substitute to ensure water quality within the County is maintained during all construction activities, regardless of discharge location. The Kern County NPDES program applies to all projects that would disturb more than 1 acre. The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for projects with construction disturbing 1 or more acres within Kern County. This form requires the applicant to provide background information on construction activities and to identify whether stormwater runoff has the potential of discharging into waters of the United States, be contained onsite, or discharge indirectly offsite to a river, lake, stream, or offsite drainage facility. Should stormwater runoff be contained onsite and not discharge into any waters, no special actions are required. Should stormwater runoff discharge into waters of the United States, compliance with the State Water Resources Control Board (SWRCB) Construction General Permit is required, which requires preparation of a SWPPP. Should stormwater runoff not drain to waters of the United States (e.g., drains to a terminal drainage facility), the applicant would be required to develop a SWPPP and BMPs.

Projects disturbing at least 1 acre of soil in Kern County are required to apply for a County NPDES Storm Water Program Permit. Prior to issuance of the permit, Kern County Engineering, Surveying and Permit Services must verify the applicant's stormwater plans. Applicants must apply for the permit under one of the following four conditions:

1. All stormwater is retained 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 SWRCB 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.

# 4.7.4 Impacts and Mitigation Measures

## Methodology

Potential significant impacts associated with the project site were identified based on a review of existing literature, and a CEQA-level *Desktop Study* prepared by Barr (2017) (see Appendix G) and available data, including the Kern County General Plan. The CEQA-level *Desktop Study* presents findings, conclusions,

and recommendations concerning development of the proposed project based on an engineering analysis of geotechnical properties of the subsurface conditions and evaluation of the underlying soils.

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:

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? Refer to Division of Mines and Geology Special Publication 42;
    ii. Strong seismic ground shaking;
    iii. Seismic-related ground failure, including liquefaction;
    iv. Landslides;
b. Results in substantial soil erosion or the loss of topsoil;
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse;
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater;

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

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/EA. Please refer to Appendix A of this EIR/EA for a copy of the NOP/IS and additional information regarding these issue areas:

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving:

   iii. Seismic-related ground failure, including liquefaction;

   iv. Landslides;

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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse;

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property; or

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.

As discussed in the NOP/IS, seismic-related ground failure - including liquefaction - was considered unlikely at the site based on available groundwater data that shows groundwater is more than 50 feet below ground surface making the potential for liquefaction remote. Conditions for landslides are also not present at the site which is characterized by relatively gradual inclines across the site. The project site would be graded in accordance with building code requirements such that the potential for unstable soils to adversely affect proposed improvements would be unlikely. Expansive soils would also be addressed by implementation of Kern County Building Code requirements, as applicable, such that impacts related to expansive soils would be less than significant. The proposed project does not include permanent staffing nor any need for septic or other wastewater disposal facilities.

# 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 several fault systems, it is not transected by a known active or potentially active fault and is not located within a Alquist-Priolo Earthquake Fault Zone. The nearest active fault to the project site is the Garlock Fault which is approximately 2 miles to the north. The other faults located in close proximity to the site are the Tylerhorse and the Cottonwood; however, these are not active faults and, therefore, are unlikely to cause fault rupture even though the Cottonwood fault is shown to intersect the southern portion

of the site. Due to the distance from the nearest active fault to the project site, the potential for surface fault rupture at the project site is considered negligible.

In addition, construction of the proposed project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2016 Edition (CCR Title 24), which incorporates substantially the same requirements as the IBC, 2015 Edition, with some modifications and amendments. Adherence to all applicable regulations would ensure that any potential impacts associated with fault rupture adjacent to the project site would be reduced. 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.

### *Mitigation Measures*

No mitigation measures are 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.

The proximity of existing active faults to the project site presents the potential for strong seismic ground shaking, which could result in damage to structures that are not properly designed to withstand such ground motion (see Table 4.7-1 and Figure 4.7-1). Adjacent faults are capable of generating ground motions that could affect the proposed project during a seismic event. Should strong seismic ground shaking occur at the project site, damage to the photovoltaic (PV) modules and other ancillary facilities could result, and construction workers and employees could be exposed to potential adverse effects.

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), the CBC. The Kern County Engineering, Surveying and Permit Services Department require the submittal of three sets of plans to the building department for review and approval prior to the issuance of a building permit; County review would ensure compliance with applicable standards. All grading and construction on site would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the seismic recommendations provided by a California-registered professional engineer in accordance with California and Kern County Building Code requirements.

Mitigation Measure MM 4.7-1 requires a final geotechnical study be performed by a qualified geotechnical engineer to confirm findings of the preliminary geotechnical engineering report, regarding soil conditions and geologic hazards at the project site. In addition, Mitigation Measure MM 4.7-2 requires that a California geotechnical engineer be hired by the project proponent to design the project facilities to withstand probable seismically induced ground shaking. All grading and construction on site would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the seismic recommendations provided by a California-registered professional engineer in accordance with CBC and Kern County Building Code requirements. The required measures would encompass site preparation, foundation specifications, and protection measures for buried metal structures. 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.

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 effects from strong seismic ground shaking would be minimized. The facility would be constructed in accordance with all applicable codes, which require property line and public roadway setbacks that would protect the general public from potential hazards associated with the facility that could result from an earthquake. Therefore, personnel present during the construction and operation phases of the proposed project would not be exposed to a substantial increase in seismic ground shaking hazards as a result of project implementation beyond those that generally exist in the entire project region. Implementation of these building code requirements and local agency enforcement would reduce impacts from ground shaking to less-than-significant levels.

### *Mitigation Measures*

**MM 4.7-1:** Prior to the issuance of building or grading permits for the proposed project, the project proponent/operator shall conduct a final geotechnical study to confirm the findings of the preliminary geotechnical engineering report regarding soil conditions and geologic hazards on the project site and submit for review and approval by the Kern County Department of Public Works and the Bureau of Land Management (BLM).

1. The final geotechnical study must be signed by a California-registered and licensed professional engineer and must include, but is not 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;
    c. Potential for seismically induced liquefaction, differential settlement, and mudflows;
    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 and any seismic hazards.
2. The project proponent shall determine the final siting of project facilities based on the results of the final geotechnical study and implement its recommended measures. The project proponent/operator shall not locate project facilities on or immediately adjacent to a fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to

accurately locate fault trace(s) to avoid siting improvements on, or close to, fault trace(s) and to evaluate the risk of fault rupture. After locating the fault, accurate setback distances can be proposed.

3. The project proponent shall evaluate final facility siting design developed prior to the issuance of any building or grading permits shall be made to verify that geological constraints have been avoided.

**MM 4.7-2:** Prior to the issuance of grading permits:

1. The project proponent shall retain a California registered and licensed engineer to design the project facilities to withstand probable seismically induced ground shaking at the project site. All grading and construction on site shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California-registered and licensed professional engineer.

   a. The procedures and site conditions shall encompass site preparation, foundation specifications, and protection measures for buried metal structures.

   b. The final structural design shall be subject to approval by Kern County Public Works and the Bureau of Land Management (BLM) and approval and follow-up inspection by the Kern County Building Inspection Department and BLM. 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 Measures 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.

Site preparation activities for the construction of the proposed project that would disturb surface soils include vegetation and debris removal, grading, excavation and trenching. Within the solar field areas, a combination of mowing, disking, and conventional grading would be used to prepare the project site for post and PV module installation. Conventional grading techniques would be used for access roads; parking areas; substations, building, or equipment foundations; detention ponds; and laydown areas. During construction activities when surface soils are exposed, rainfall events and moderate to high winds have the potential to result in significant surface erosion and offsite sediment transportation. Project construction would therefore have the potential to result in significant impacts related to erosion, sedimentation, and discharge of construction debris from the site if preventative mitigation measures are not implemented. Clearing of vegetation and grading activities, for example, could lead to exposed or stockpiled soils susceptible to peak stormwater runoff flows and wind forces. The compaction of soils by heavy equipment may reduce the infiltration capacity of soils (exposed during construction) and increase runoff or erosion potential. The presence of large amounts of raw materials for construction, including aggregate base course material, also has the potential to erode and to come into contact with stormwater and contaminate receiving waters. Therefore, implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4 are recommended to

minimize erosion to the maximum extent feasible during pre-construction activities, such as grading and disking, and during project construction activities.

Due to the project site's relatively flat topography, only minor cuts and fills are expected to bring the site to design grades, and thus grading disturbances would be relatively minimal. As part of Mitigation Measure MM 4.7-3, grading would be minimized to the maximum extent feasible as part of project design; grading plans would be reviewed by the County prior to issuance of a grading permit. Because project construction would disturb well over an acre of ground, the project operator would conform to the requirements of Kern County's NPDES Program through the preparation of a SWPPP that would include erosion control and sediment control BMPs designed to prevent disturbed soils from moving offsite. Further, Mitigation Measure MM 4.7-4 would ensure that preparation of a Soil Erosion and Sedimentation Control Plan is included as part of the SWPPP, and would include post-construction monitoring to check for and fix any erosion occurring on site access roads. 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.

Project operations may include the periodic cleaning of the solar panels with water. However, infrequent water application, the minimal amount of water applied, and the site's flat topography is not expected to generate quantities and velocities of runoff sufficient to substantially erode soils. No impacts to erosion are expected to occur during the operational phase of the proposed project.

### *Mitigation Measures*

**MM 4.7-3:** The project proponent/operator shall minimize grading. Prior to the initiation of construction, the project proponent/operator shall retain a California registered and licensed professional engineer to submit final grading earthwork and foundation plans, incorporating best management practices to limit onsite and offsite erosion to the extent feasible, to the Kern County Public Works Department and the Bureau of Land Management (BLM) for review and approval.

**MM 4.7-4:** Prior to grading, construction, and demolition activities, the project proponent/operator shall include a Soil Erosion and Sedimentation Control Plan as part of the SWPPP prepared for the project to mitigate potential loss of soil and erosion. The plan shall be prepared by a California-registered and licensed civil engineer or other County-approved professional, and submitted to the Kern County Public Works Department and the Bureau of Land Management (BLM) for review and approval.

1. The Soil Erosion and Sedimentation Control Plan shall include, but is not limited to, the following:
    a. Best management practices to minimize soil erosion consistent with Kern County grading requirements and the Lahontan Regional Water Quality Control Board requirements pertaining to the preparation of a Stormwater Pollution Prevention Plan (best management practices recommended by the Kern County Public Works Department and the BLM shall be reviewed for applicability).
    b. Provisions to maintain flow in washes, should it occur, throughout construction.

c. Provisions for site revegetation using native seed mix or allowing for existing vegetation to grow.

d. Sediment collection facilities as may be required by the Kern County Public Works Department and the BLM.

e. A timetable for full implementation, estimated costs, and a surety bond or other security as approved by the County and the BLM.

f. Other measures required by the County and the BLM during permitting, including long-term monitoring (post-construction) of erosion control measures until site stabilization is achieved.

### *Level of Significance after Mitigation*

With implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4, impacts would be less than significant.

### Impact 4.7-4: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

A cultural resources assessment was conducted for the project site which included a search of paleontological records (SCWA 2017). The records search conducted by the Natural History Museum of Los Angeles County and a literature review revealed a rich history of fossil finds in the geologic units in and around the project site. While the younger Alluvium found on the eastern portion of the site has a low paleontological sensitivity, the older Alluvium that covers most of the project site, and underlies the younger Alluvium, has a record of preserving significant fossil specimens.

The literature and map review, as well as the paleontological records search failed to indicate the presence of previously identified significant paleontological localities onsite; however, geologic units underlying the proposed project have a high paleontological sensitivity with respect to their potential to yield fossil remains. In the older Alluvium, which is mapped across most of the project site, significant fossils could occur at or near the surface. Any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. Potential impacts to paleontological resources would be reduced to less than significant with implementation of Mitigation Measures MM 4.7-5 through MM 4.7- 7.

## 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 conduct a Paleontological Resources Awareness Training program for all construction personnel working on the project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training Guide shall be submitted to the Kern County Planning and Natural Resources Department and Bureau of Land Management (BLM). 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 retained to monitor all ground-disturbing activity (with the exception of vibratory or hydraulic installation of tracking or mounting structures and foundations or supports) that occurs at any depth below ground surface.

1. 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.
    a. 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 and the Bureau of Land Management (BLM), may adjust the level of monitoring to circumstances, as warranted.
2. Paleontological monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments. The qualified paleontologist and designated monitor shall have authority to temporarily divert excavation operations away from exposed fossils to collect associated data and recover the fossil specimens if deemed necessary.
3. Following the completion of construction, the qualified 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 proposed project would be cumulatively considerable if they would have the potential to combine with similar impacts of other past, present, or reasonably foreseeable projects. Cumulative projects listed in Table 3-5, *Cumulative Projects List*, of Chapter 3, *Project Description*, of this EIR/EA would also be subject to similar seismic hazards. 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 proposed project if they occurred in the same location as the proposed project.

Development of the proposed project, with implementation of the regulatory requirements discussed above, would result in less-than-significant impacts related to exposing persons or structures to geologic, 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 proposed project, other projects in the area would be required to adhere to the same CBC and Kern County Building Code, 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 proposed 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 proposed project would result in less-than-significant cumulative impacts related to geology and soils. However, surficial deposits, namely erosion and sediment deposition, can be cumulative in nature, depending on the type and amount of development proposed in a given geographical area. The cumulative setting for soil erosion consists of existing, planned, proposed, and reasonably foreseeable land use conditions in the region. 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. Development of the project site has the potential to contribute to soil erosion and loss of topsoil during construction. These potential impacts would be mitigated through the implementation of the SWPPP and BMPs. Impacts associated with erosion are mitigated on a project-by project basis, which would reduce the overall cumulative impact to a less than significant level.

Although construction activities have the potential to result in erosion on the project site, implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4, as well as the required SWPPP and BMPs (see also Section 4.9, *Hydrology and Water Quality*) would significantly reduce erosion from the proposed project. 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 proposed project would not contribute to any cumulative impacts for geologic, seismic hazards or related events. Moreover, implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7 would ensure that the proposed project does not have any significant impacts related to paleontological resources. As a result, with implementation of mitigation, cumulative impacts related to geology and soils are less than significant.

Cumulative impacts to paleontological resources in the Antelope Valley could occur if other related projects, in conjunction with the proposed project, had or would have impacts on paleontological resources that, when considered together, would be significant. Development of the proposed project, in combination with other projects in the area, has the potential to contribute to a cumulatively significant paleontological resources impact due to the potential loss of paleontological resources unique to the region. However, mitigation measures are included in this EIR/EA to reduce potentially significant project impacts to cultural 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. Implementation of these mitigation measures would reduce potential impacts to paleontological resources to a less-than-significant level. 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.

With implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7, as described above, the proposed 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*

Implement 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.

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Section 4.8
# Greenhouse Gas Emissions

## 4.8.1 Introduction

This section of the EIR/EA describes the affected environment and regulatory setting relating to greenhouse gases (GHGs) for the proposed project. This section also describes the impacts associated with GHGs that would result from implementation of the proposed 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 Impact Analysis for the Proposed Camino Solar Project* (Ambient 2017) located in Appendix C of this EIR/EA. The impact assessment for the proposed 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).

### Climate Change

In the early 1960s, scientists recognized that carbon dioxide (CO2) levels in the atmosphere were rising every year. It was also noted that several other gases, including methane (CH4) and nitrous oxides (N2O) were also increasing. Levels of these gases have increased by about 40 percent since large-scale industrialization began around 150 years ago, according to the USEPA. After numerous computer-simulated model runs on the effects of these increase in the atmosphere, it was concluded that the rising concentrations almost always resulted in an increase of average global temperature. Rising temperatures may, in turn, produce changes in weather, sea levels and land use patterns, commonly referred to as "climate change." There is general scientific consensus that climate change is occurring and that human activity contributes in some measure (perhaps substantially) to that change. Man-made emissions of GHGs, if not sufficiently curtailed, are likely to contribute further to continued increases in global temperatures. Increases in global temperatures will cause a reduction in the polar ice caps and increase in sea level which will result in flooding in low lying areas of the world. Additionally, climate change will shirt rainfall patterns, which will cause significant impacts to agriculture and fresh water availability worldwide.

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 worldwide scientific community agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases (i.e., global warming).

Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates the earth's temperature; however, emissions from human activities such as electricity production and the use of motor vehicles have elevated the concentration of GHGs in the atmosphere. This accumulation of GHGs had contributed to an increase in the average temperature of the earth's atmosphere and has contributed to global climate change. Of the principal GHGs [i.e., $CO_2$m $CH_4$, $N_2O$, sulfur hexafluouride ($SF_6$), perfluorocarbons (PFCs), and hydroifuorocarbons (HFCs)], $CO_2$ is the most common reference gas for climate change. Using the Global Warming Potential (GWP) measurement, GHG emissions are often quantified and reported as $CO_2$ equivalent ($CO_2$e). Large emissions sources are reported in million metric tons of $CO_2$e (MMT $CO_2$e).

As the concentrations of GHGs continue to increase in the atmosphere, the Earth's surface temperature is also increasing, exceeding past levels. The Earth's average surface temperature has increased by about 0.15 degrees in Fahrenheit (F) per decade since 1901. On average, the warmest global temperatures on record have all occurred between 2006 and 2015, with 2015 being the warmest on record (USEPA, 2016c). Climate models predict that the average temperature on Earth's surface could increase from 0.5 to 8.6F by the end of this century if GHGs continue to increase (USEPA, 2017).

Some of the potential effects in California of global warming may include increases in extreme heat, wildfires, drought, extreme storms, coastal flooding, and erosion, and reductions in the Sierra Nevada springtime snowpack. (CARB 2014d). 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 and fewer cold days and frost days over nearly all land areas

Reduced diurnal temperature range over most land areas;

Increased heat index over land areas; and

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. Potential effects include:

**Sea Level Rise.** Since 1870 the global sea level has risen about 8 inches. The rising sea level increases the likelihood and risk of flooding. Future sea level rise will vary for different reasons but is expected to rise at a greater rate than during the past 50 years. Regional factors, such as land elevation changes that occur due to subsidence or uplifting, will influence the relative sea level rise for the coastlines around the world. However, global sea level rise of 1 to 4 feet could occur by 2100 (USEPA, 2017).

**Air Quality.** Higher temperatures, which are conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State.

**Water Supply.** Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century. During the same period, sea level rose eight inches along the California coast. California's temperature has risen 1 degrees Fahrenheit, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (DWR, 2008).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during our wet winters and releasing it slowly when needed during dry springs and summers. The Sierra snowpack is expected to experience a 25 to 40 percent reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR, 2008).

**Hydrology.** As discussed previously, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise may be a product of climate change through two main processes; expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

**Agriculture.** California has a $30 billion agricultural industry and has the highest crop value in the nation serving as an important source of the nation's food supply. Changes in temperature and water availability, compounded by annual and seasonal shifts and extremes, will affect both crop yield and quality. Indirect impacts such as decreases of pollinators and increases in pests and diseases will also have a negative effect on agricultural yield.

**Ecosystems and Wildlife**. Climate change and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increase in drought, wildfire, invasive species, and pests as well as geographic ranges will threaten native ecosystems in the southwest. Over 3,000 native California species of plants are expected to face reductions in geographic ranges in which they can survive. Climate change and other stressors will hinder the species' ability to migrate or adapt. These stressors include human expansion, air and water pollution, invasive species, streamflow reductions, and mountainous terrain (DWR, 2008).

# 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. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide, methane, and nitrous oxide) while others are exclusively human-made (e.g., gases used for aerosols). The principal GHGs are water vapor ($H_2O$), carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), sulfur hexafluoride ($SF_6$), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs), and are listed below (USEPA 2015).

**Carbon dioxide:** $CO_2$ enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). $CO_2$ is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

**Methane:** $CH_4$ is emitted during the production and transport of coal, natural gas, and oil. $CH_4$ emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

**Nitrous oxide:** $N_2O$ is emitted during agricultural and industrial activities and during combustion of fossil fuels and solid waste.

**Fluorinated gases:** HFCs, PFCs, and $SF_6$ are synthetic, powerful climate-change gases emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in minute quantities, but because they are potent climate-change gases, they are sometimes referred to as high Global Warming Potential (GWP) gases.

**Sulfur hexafluoride:** $SF_6$ is a colorless, odorless, nontoxic, nonflammable gas. $SF_6$ is most commonly used as an electrical insulator in high-voltage equipment that transmits and distributes electricity, including equipment such as electrical circuit breakers, which may be used for the proposed project. The California Climate Action Registry (Registry) lists $SF_6$ as a potential source of fugitive emissions from electrical transmission and distribution equipment. Fugitive emissions are unintentional leaks of GHGs from equipment such as joints, seals, and gaskets.

Because different GHGs have different GWPs and $CO_2$ is the most common reference gas for climate change, GHG emissions are often quantified and reported as $CO_2$ equivalents ($CO_2e$). For example, $SF_6$ is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. $SF_6$, while comprising a small fraction of the total GHGs emitted annually worldwide, is a much more potent GHG with 22,800 times the GWP as $CO_2$. Therefore, an emission of 1 metric ton (MT) of $SF_6$ could be reported as an emission of 22,800 MT of $CO_2e$ (IPCC 2007). Large emissions sources are reported in million MT (MMT) of $CO_2e$ ($MMTCO_2e$).

In most cases, GHGs have both natural and anthropogenic (human-caused) sources. Natural mechanisms already exist as part of the "carbon cycle" for removing GHGs from the atmosphere (often called land or ocean sinks). Because of the increase in anthropogenic sources, levels of GHGs have exceeded the normal rates of natural absorption. This has resulted in increased atmospheric concentrations of GHGs and potentially human-induced climate change.

GHG emissions in the United Sates come mostly from energy use. These are driven largely by economic growth, fuel used for electricity generation, and weather patterns affecting heating and cooling needs.

Energy-related $CO_2$ emissions resulting from fossil fuel exploration and use account for approximately three-quarters of the human-generated GHG emissions in the United States, primarily in the form of $CO_2$ emissions from burning fossil fuels. More than half the energy-related emissions come from large stationary sources, such as power plants; approximately one-third come from transportation; and industrial processes, agriculture, forestry other land uses, and waste management make up most of the other sources.

As previously stated, the generation of electricity can produce GHGs with criteria air pollutants that have been traditionally regulated under the Federal and State Clean Air Acts. For fossil fuel—fired power plants the GHG emissions include primarily $CO_2$, with much smaller amounts of $N_2O$ (not nitric oxide [NO] or nitrogen dioxide [NO2], which are commonly known as oxides of nitrogen [NOx]), and $CH_4$ (often from unburned natural gas). For photovoltaic solar power energy generation projects, stationary-source GHG emissions are much smaller than fossil fuel-fired power plants, but the associated maintenance vehicle emissions are higher due to the different and far-afield maintenance requirements that necessitate more vehicles and more travel within the project site. Other sources of GHG emissions include $SF_6$ from high voltage equipment and HFs and PFs from refrigeration/chiller equipment. GHG emissions from the electricity sector are dominated by $CO_2$ emissions from carbon-based fuels; other sources of GHG emissions are small and are more likely to be easily controlled or reused/recycled.

Scientists believe that most areas in the United States will continue to warm, although some will most likely warm more than others. Predicting which parts of the country will become wetter or drier is extremely difficult, but scientists generally expect increased precipitation and evaporation as well as drier soil in the middle parts of the country. The northern regions, such as Alaska, are expected to experience the most warming.

# Emissions Inventories

California produced approximately 429.4 gross $MMTCO_2e$ in 2016, which is below the State's GHG reduction target of 1990 level GHG emissions (i.e., 431 $MMTCO_2e$) 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 39 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 16 percent (CARB 2018a). CARB has projected that, unregulated, statewide GHG emissions for the year 2020 will be approximately 509 $MMTCO_2e$ (CARB 2014a). 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 2016 are summarized in **Table 4.8-1**, *California Greenhouse Gas Emissions (MMTCO2e)*, including the percentages by sector for 2016.[1]

# Greenhouse Gas Emissions and the Electricity Sector

In-state electricity production accounts for roughly 11 percent of the State's overall GHG emissions inventory (AMBIENT 2017). With the enactment of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, achieving reductions in GHG emissions from the utility sector became

[1] The most recent annual GHG emission inventory released by CARB is for year 2015, which was released June 6, 2017.

increasingly important. Although initially established in 2002 and subsequently revised over the years, the Renewables Portfolio Standard (RPS) Program was accelerated in 2008 with the signing of Executive Order S-14-08, and required that retail sellers of electricity to obtain 33 percent of their load from renewable resources by 2020. The following year, Executive Order S-21-09 directed CARB, under the authority of AB 32, to enact regulations to achieve the goal of 33 percent renewables by 2020. In accordance with current RPS requirements, all electricity retailers in the state must now achieve an RPS requirement of 33 percent renewables by the end of 2020 and 50 percent by the end of 2050.

**TABLE 4.8-1: CALIFORNIA GREENHOUSE GAS EMISSIONS ($MMTCO_2E$)**

| Emission Inventory Category | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | |
|---|---|---|---|---|---|---|---|---|---|
| Transportation | 170.40 | 165.07 | 161.51 | 161.22 | 160.90 | 162.28 | 166.14 | 169.38 | 39.4% |
| Electricity Generation (In-State) | 53.33 | 46.75 | 41.20 | 51.03 | 49.47 | 51.72 | 49.93 | 42.30 | 9.9% |
| Electricity Generation (Imports) | 48.04 | 43.59 | 46.86 | 44.07 | 40.17 | 36.51 | 33.74 | 26.28 | 6.1% |
| Commercial | 15.16 | 15.86 | 15.86 | 15.55 | 15.40 | 14.50 | 14.65 | 15.16 | 3.5% |
| Industrial | 87.90 | 91.50 | 90.94 | 91.07 | 93.73 | 93.96 | 91.58 | 89.61 | 20.9% |
| Residential | 28.47 | 29.19 | 29.64 | 27.34 | 28.14 | 22.87 | 23.29 | 24.20 | 5.6% |
| Agriculture | 33.50 | 34.27 | 34.89 | 36.08 | 34.61 | 35.95 | 34.41 | 33.84 | 7.9% |
| High Global Warming Potential | 12.29 | 13.52 | 14.54 | 15.54 | 16.65 | 17.70 | 18.93 | 19.78 | 4.6% |
| Recycling and Waste | 8.27 | 8.37 | 8.47 | 8.49 | 8.52 | 8.59 | 8.73 | 8.81 | 2.1% |
| **Total Gross Emissions** | 457.3 | 448.1 | 443.9 | 450.4 | 447.6 | 444.1 | 441.4 | 429.4 | 100% |

SOURCE: CARB 2018b.

# California's Electricity Sector Renewable Resource Mix

To date, the mix of renewable energy generating technologies in the State of California has been largely comprised of wind, solar photovoltaic (PV), solar thermal, hydroelectric, geothermal, and biomass. In 2015, wind and geothermal generating facilities supplied the majority of California's renewable generation, contributing approximately 31 percent and 29.7 percent, respectively. However, over the last few years, the contribution from solar PV facilities has been steadily increasing (AMBIENT 2017). By 2020, the State's mix of renewable technologies is projected to include a substantial increase in contributions from solar PV facilities. By 2020, PV technology is forecasted to contribute nearly 58,000 Gigawatt hours of electricity, roughly 44.3 percent of the state's total renewable mix.

# 4.8.3 Regulatory Setting

## Federal

### U.S. Environmental Protection Agency

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 proposed project include:

#### Clean Air Act

The Federal Clean Air Act (CAA) requires USEPA to define national ambient air quality standards to protect public health and welfare in the U.S. 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-$CO_2$ 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 ($CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, and $SF_6$). 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.

#### 40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule.

This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MT of $CO_2e$ emissions per year (USEPA 2011b). 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 proposed project would not be expected to trigger GHG reporting according to the rule; however, GHG emissions of the proposed project are quantified in this EIR/EA.

### 40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule.

USEPA has mandated that Prevention of Significant Deterioration (PSD) and Title V requirements apply to facilities whose stationary source $CO_2e$ emissions exceed 100,000 tons per year (USEPA 2016f). The proposed project would not be expected to trigger PSD permitting as required by this regulation, because it would generate less than 100,000 tons of CO2e emissions per year. GHG emissions of the proposed project are quantified in this EIR/EA.

### U.S. Supreme Court Decision in Utility Air Regulatory Group v. USEPA

On June 23, 2014, the U.S. Supreme Court held that USEPA may not treat GHG emissions as an air pollutant for purposes of determining whether a source is a Mojave source required to obtain a PSD or Title V permit. The Court also held that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology (BACT). In accordance with the Supreme Court decision, on April 10, 2015, the D.C. Circuit issued an amended judgement in Coalition for Responsible Regulation, Inc. v. U.S. Environmental Protection Agency, which vacated the PSD and Title V regulations under review in that case to the extent that they require a stationary source to obtain a PSD or Title V permit solely because the source emits or has the potential to emit GHGs above the applicable major source thresholds. The D.C. Circuit also directed USEPA to consider whether any further revision to its regulations are appropriate, and if so, to undertake to make such revisions. In response to the Supreme Court decision and the D.C. Circuit's amended judgment, the EPA intends to conduct future rulemaking action to make appropriate revisions to the PSD and operation permit rules (USEPA, 2016d).

# State

## California Environmental Quality Act

There are a variety of statewide and local Air Pollution Control District (APCD)-levels rules and regulations that have been implemented or are in development in California that mandate the quantification or reduction of GHGs. Under CEQA, an analysis and mitigation of emissions of GHGs and climate change in relation to a project is required when it has been determined that a project will result in significant increase in GHGs. However, neither thresholds of significance nor methods of analysis are defined in CEQA. Certain APCDs have proposed their own levels of significance. On March 8, 2012, the EKAPCD Governing Board adopted an addendum to its CEQA *Guidelines* titled: Addressing GHG Emissions 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 significance of GHG emissions from new and modified stationary source (industrial) projects (EKAPCD, 2012).

## 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

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which setforth a series of target dates to reduce statewide GHG emissions to be progressively reduced through year 2050, to historical levels, as follows:

By 2010, reduce GHG emissions to 2000 levels;

By 2020, reduce GHG emissions to 1990 levels; and

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).

Executive Order B-30-15 also specifically addresses the need for climate adaptation and directs the State government to:

Incorporate climate change impacts into the State's Five-Year Infrastructure Plan;

Update the Safeguarding California Plan, the state climate adaption Strategy to identify how climate change will affect California infrastructure and industry and what actions the State can take to reduce the risks posed by Climate change;

Factor climate change into State agencies; planning and investment decisions; and

Implement measures under existing agency and departmental authority to reduce GHG emissions (Office of the Governor, 2015).

Executive Order B-30-15 requires CARB to update the AB 32 Climate Change Scoping Plan to incorporate the 2030 target. The 2030 Draft Scoping Plan (Draft Scoping Plan) will serve as the framework to define the State's climate change priorities for the next 15 years and beyond. In June 2016, CARB released the 2030 Target Scoping Plan Update Concept Paper to describe potential policy concepts to achieve the 2030 target that can be incorporated in the Draft Scoping plan. The concept paper presents four potential high-level concepts for achieving the needed GHG reductions (CARB, 2016c).

## Executive Order S-14-08

Executive Order S-14-08, was established by California Governor Schwarzenegger in November 2008. The order established a Renewable Portfolio Standard (RPS) for all retail sellers of electricity. The specifics of this executive order include the following:

Requires retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020;

Requires various State agencies to streamline processes for the approval of new renewable energy facilities and determine priority renewable energy zones; and

Establishes the requirement for the creation/adoption of the Desert Renewable Energy Conservation Plan (DRECP) process for the Mojave and Colorado Desert regions.

Executive Order S-14-08 does not include any specific requirements that pertain directly to the proposed project. However, as a renewable energy project, the proposed project will help the utility contracting power from the proposed project meet the established RPS standard.

## Assembly Bill 32 and Senate Bill 32

Enacted in 2006, AB 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006) focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as $CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, and $SF_6$ and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions, and is required to adopt rules and regulations directing State actions that would reduce GHG emissions to 1990 levels by 2020.

Enacted 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

Assembly Bill 32 (AB 32), the Global Warming Solution Act of 2006, was enacted as legislation and required CARB to establish a statewide GHG emission cap for 2020 based on 1990 emission levels. AB 32 also required CARB to adopt regulations that identified and required selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions, with CARB authorized to enforce compliance with the program. CARB prepared 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 an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap (CARB 2008). In 2008, the initial 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 built upon the initial Scoping Plan with new strategies and recommendations (CARB 2014a). 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 2017b).

As a renewable energy project, the proposed project is exempt from the mandatory GHG emissions reporting requirements for electricity generating facilities as currently required by CARB for compliance

with the California Global Warming Solutions Act of 2006 (AB 32 Nunez, Statutes of 2006, Chapter 488, Health and Safety Code Sections 38500 et seq.).

## Senate Bill 97

Senate Bill 97 (SB 97), enacted in August 2007, required 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. On April 13, 2009, OPR submitted proposed amendments to the Natural Resources Agency, in accordance with SB 97, regarding analysis and mitigation of GHG emissions. Formal rulemaking was conducted in 2009 prior to adopting the amendments. As discussed below, the CEQA significance analysis for the proposed project was conducted in accordance with the proposed OPR guidance developed under this statute.

As part of the guidelines, OPR recommended that CARB set statewide thresholds of significance, and emphasized the need to have a consistent threshold available to analyze projects. The draft guidelines also noted that the analyses should be performed based on the best available information.

As directed by SB-97, the Natural Resources Agency adopted amendments to the CEQA *Guidelines* for GHG emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. On March 28, 2010, the CEQA *Guidelines* were amended to include GHG emissions.

## Senate Bill 350

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) was signed into law on October 7, 2015, and requires the California Public Utilities Commission (CPUC) to focus energy procurement decisions on reducing GHG emissions by 40 percent below 1990 levels by 2030, generate half of its electricity from renewable energy sources, double electricity and natural gas end-use efficiency in all buildings by 2030, and promote the construction of infrastructure for electric transportation. This legislation increases the requirement of RPS from 33 percent by 2020 to 50 percent by 2030 (California Legislative Information [CLI], 2015).

## 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).

On August 16, 2018, Kern Council of Governments (KCOG) adopted the 2018 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) and the 2019 Federal Transportation Improvement

Program (FTIP). As part of the 2018 RTP/SCS, Chapter 4, Sustainable Communities Strategy, includes land use planning strategies and policies to reduce air emissions from passenger vehicle and light duty truck travel by better coordinating transportation expenditures with forecasted development patterns in order to meet the GHG emissions reduction targets for the region to comply with AB 32 and SB 375.

## California Green Building Standard Code

Adopted in 2011, the 2010 CALGreen Code 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 non-residential buildings of any size that are not additions to existing buildings. Updated in 2014, the 2013 CALGreen Code anticipated reducing GHG emissions by 3 MMT by 2020, reducing water use by 20 percent or more, and diverting 50 percent of construction waste from landfills. The 2013 California Energy Code (Title 24, Part 6) was established, as part of the CALGreen Code (Title 24, Part 11, Chapter 5.2).

## 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 (CPUC 2018). Enacted 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 advised 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 1368

Senate Bill 1368 (SB 1368) was enacted in 2006, and requires the CPUC to establish a CO2e emissions standard for publicly owned or leased facilities which generate electricity at a GHG Emission 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.

## 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 (CAPCOA 2008). The strategies provided in that document are guidelines only and have not been adopted by any regulatory agency. The white paper serves as a resource to assist lead agencies in evaluating GHGs during review of environmental information documents. The methodologies used in this GHG analysis are consistent with the CAPCOA guidelines.

Since the proposed project, if approved, would be built before the end of 2020, it will not be required to comply any building codes and Kern County General Plan requirements to specifically address the 2050 goal. The County has not required development to conform to a goal established for 2050 due to the technology changes and lifestyle changes that would occur in California over the next 40 years. There is no nexus for such a standard and it is considered speculative under CEQA for a project-level EIR.

# 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 2018b). The 2018 RCP is a long-term (24 year) general plan for the region's transportation network, and encompasses projects for all types of travel, including aviation and freight movement. The plan assesses environmental impacts of proposed projects.

The Kern COG 2018 RTP includes an SCS component in accordance with SB 375, the Sustainable Communities and Climate Protection Act of 2008. The Kern COG board of directors adopted its first SCS on June 19, 2014, and made a determination that, if implemented, the SCS would achieve the per capita passenger vehicle GHG emissions targets established by the board of directors. The 2020 target is a 5 percent per capita reduction and the 2035 target is a 10 percent per capita reduction from the 2005 base year.

The SCS strives to reduce air emissions from passenger vehicle and light-duty truck travel by better coordinating transportation expenditures with forecasted development patterns and, if feasible, help meet CARB GHG targets for the region. As explained in the Kern COG 2018 RTP EIR, the key purpose of SB 375 and the Kern COG SCS is to reduce per capita emissions originating from passenger vehicles and light-duty trucks. Accordingly, the 2018 RTP:

> Describes sources of emissions in the Kern region, 2020 and 2035 emission reduction targets established by CARB for the San Joaquin Valley, and modeling techniques used to estimate and forecast emissions
>
> Identifies statewide strategies to reduce transportation-related emissions and their anticipated effect within the Kern region
>
> Identifies regional strategies that complement the SCS by reducing emissions in other sectors (e.g., energy consumption)
>
> Quantifies the effect of policies and programs in the RTP that reduce transportation-related emissions in the region and
>
> Compares the emissions reductions anticipated with implementation of the SCS with the regional targets (Kern COG 2018b).

# Local

## Kern County General Plan

The Land Use, Open Space, and Conservation Element of the Kern County General Plan provides goals, policies, and implementation measures applicable to air quality, and as related to the proposed project, which would also reduce project GHG emissions (through the reduction of fossil fuel use). These goals, policies, and implementation measures are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the proposed project. Therefore, they are not listed below.

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

#### *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.

#### *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: 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 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

#### *Goals*

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.

### Energy, Efficiency, and Conservation Projects

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 proposed project.

### Eastern Kern Air Pollution Control District

In 2012, EKAPCD adopted an addendum to its CEQA *Guidelines* to address GHG impacts. The CEQA *Guidelines* provide quantitative thresholds for determining significance of GHG emissions for projects where EKAPCD is the CEQA lead agency. A project is considered to have a significant project or cumulative considerable impact if it generates 25,000 tons or more of $CO_2e$ per year (22,680 $MTCO_2e$).

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 it if 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.

# 4.8.4 Impacts and Mitigation Measures

## Methodology

The proposed project's potential impacts to GHGs have been evaluated using a variety of resources, including the *Air Quality and Greenhouse Gas Impact Analysis for the Proposed Camino Solar Project* (AMBIENT 2017), which is provided in Appendix C of this EIR/EA, and relevant literature including information and guidelines by CARB, USEPA, and the applicable provisions of CEQA. In addition to the project's criteria air pollutant emissions (under Section 4.3 Air Quality), the project's construction and operational GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.1, and EMFAC2014, CARB's on-road vehicle emissions model. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria, described in the Thresholds of Significance section.

EKAPCD 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 AB 32 Scoping Plan is presumed to have less-than-significant GHG impacts.

In 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 project impact or cumulatively considerable impact if it exceeds the following criteria:

> Generate 25,000 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 proposed 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. More detail on the methodology used for analyzing construction and decommissioning impacts, operational impacts, and emissions reductions is provided below.

## Construction and Decommissioning

The construction phase of a project generates air pollutant emissions including GHGs, which are recognized to be short in duration and without lasting impacts on air quality. Short-term construction emissions associated with the proposed project, including emissions associated with the operation of off-road equipment, haul-truck trips, and on-road worker vehicle trips, were calculated using CalEEMod, version 2016.3.1 for the air quality analysis in the Air Quality section, which also provides GHG emissions. Emissions modeling included emissions generated during initial move on, site preparation, onsite road construction, the installation of electrical infrastructure and solar arrays, and construction of the battery storage facility. Total construction-generated GHG emissions were amortized over an assumed 35-year project life. More details regarding emissions modeling methodology can be found in Section 4.3.4.

## Operational

Long-term operational emissions associated with the proposed project were calculated using CalEEMod, version 2016.3.1 for the air quality analysis in the Air Quality section, which also provides GHG operational emissions. More details regarding emissions modeling methodology and displaced grid electricity emissions can be found in Section 4.3.4.

# Thresholds of Significance

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

# Project Impacts

### Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

The proposed project would directly generate GHG emissions during construction and routine operational and maintenance activities. Three primary GHGs associated with the project - $CO_2$, $CH_4$, and $N_2O$ - 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 proposed project are shown in **Table 4.8-2**, *Estimated Project Greenhouse Gas Emissions.*

**TABLE 4.8-2: ESTIMATED PROJECT GREENHOUSE GAS EMISSIONS**

| Phase | GHG Emissions $CO_2e$ (metric tons) |
|---|---|
| Construction (9 months) | |
| Total Project GHG Construction Emissions | 1,661 |
| Amortized Project GHG Construction Emissions[1] | 55 |
| Annual Project GHG Operational Emissions | 122 |
| **Total Project GHG Emissions** | **177** |
| EKCAPCD Threshold | 25,000 |
| Exceed Threshold? | No |

[1] Project construction emissions amortized over 30 years are calculated by dividing total construction emissions by 30 years, which are added to the annual operational emission, to estimate project GHG emissions.

NOTE: See Appendix C for GHG emissions calculations. Note that the numbers have been rounded to the nearest metric ton, and therefore values may not add exactly.

SOURCE: AMBIENT 2017.

As shown in Table 4.8-2, the total project construction-related $CO_2e$ emissions, amortized over a default project lifetime (30 years) per South Coast Air Quality Management District (SCAQMD) methodology outlined in their Draft Guidance Document for Interim CEQA GHG Significance Thresholds, were added to the project operational emissions and results in total project GHG emissions of 177 MTs per year of $CO_2e$, which is below the EKAPCD threshold of 25,000 MTs per year of $CO_2e$. Therefore, the project's contribution to climate change would not be cumulatively considerable, and the proposed project would not conflict with the State's goal to reduce GHG emissions to 1990 levels by 2020.

In addition, because the proposed 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 proposed project would create renewable energy over the planned 35-year life of the project. This energy could displace the GHG emissions which would otherwise be produced by existing business as usual (BAU) power generation resources (including natural gas, coal, and renewable combustion resources). The proposed project would generate up to 44 megawatts (MW) of electricity at any one time. The project's displaced GHG emissions are shown in **Table 4.8-3**, *Displaced GHG Emissions over 35-Year Operational Lifetime.*

**TABLE 4.8-3: DISPLACED GHG EMISSIONS OVER 35-YEAR OPERATIONAL LIFETIME**

| | $CO_2e$ (metric tons) |
|---|---|
| Annual Displaced Emissions | 23,089 |
| Total Project Displaced Emissions | 808,115 |

SOURCE: AMBIENT 2017; ESA 2018.

As shown in Table 4.8-3, the proposed project could displace over 800,000 MTs of $CO_2e$ over its approximately 35-year lifespan. Such a reduction would assist in the attainment of the State's goal to reduce GHG emissions. Therefore, operation of the proposed project would result in a substantial net reduction in GHG emissions, even when accounting for the very minimal operational GHG emissions of the proposed project from a relatively small number of periodic maintenance and vehicle trips.

## Compliance with Strategies

The proposed project would comply with the strategies recommended by the State of California, USEPA, and the Climate Change Scoping Plan, as shown in **Table 4.8-4,** *California Greenhouse Gas Emissions Reduction Strategies*. In order to meet the AB 32 GHG emissions reduction mandate, the Scoping Plan relies on achievement of the 33 percent RPS by 2020 and 50 percent by 2030. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the proposed project is reasonably expected to displace region-wide and statewide emissions of GHGs over the expected life of the proposed project.

**TABLE 4.8-4: CALIFORNIA GREENHOUSE GAS EMISSIONS REDUCTION STRATEGIES**

| Strategy | Project Design 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 proposed 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 GWP refrigerants be used in new vehicular systems; (3) Adopt specifications for new commercial refrigeration; (4) Add refrigerant leak tightness to the pass criteria for vehicular Inspection and Maintenance programs; and (5) Enforce federal ban on releasing HFCs. | This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations apply to would comply with the measures. |

**TABLE 4.8-4: CALIFORNIA GREENHOUSE GAS EMISSIONS REDUCTION STRATEGIES**

| Strategy | Project Design to Comply with Strategy |
|---|---|
| Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification. | Not applicable |
| Manure Management: Reduction of volatile organic compounds from confined animal facilities through implementation of control options. | Not applicable |
| Alternative Fuels - Biodiesel Blends: CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel. | Not applicable |
| Alternative Fuels - Ethanol: Increased use of ethanol fuel. | Not applicable |
| Achieve 50 percent Statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a statewide basis. Therefore, a 2 percent additional reduction is needed. | The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended. |
| Zero Waste - High Recycling: Additional recycling beyond the State's 50 percent recycling goal. | The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended. |
| Landfill Methane Capture: Install direct gas use or electricity projects at landfills to capture and use emitted methane. | Not applicable |
| Urban Forestry: A new statewide goal of planting five million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs. | Not applicable |
| Afforestation/Reforestation Projects: Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types. | Not applicable |
| Water Use Efficiency: 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. | Not applicable |
| Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (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. |

**TABLE 4.8-4: CALIFORNIA GREENHOUSE GAS EMISSIONS REDUCTION STRATEGIES**

| Strategy | Project Design to Comply with Strategy |
|---|---|
| Cement Manufacturing: Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry. | Not applicable |
| Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage jobs/housing proximity, promote transit oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services. | Not applicable |
| Smart land use, demand management, ITS, and value pricing are critical elements for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high-density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning. | Not applicable |
| Enteric Fermentation: Cattle emit methane from digestion processes. Changes in diet could result in a reduction in emissions. | Not applicable |
| Green Buildings Initiative: Green Building Executive Order, S-20-04 (CA 2005), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels. Consistent with Mitigation. | Not applicable |
| California Solar Initiative: Installation of 1 million solar roofs or an equivalent 3,000 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 up to approximately 44 MW alternating current (MW-AC). Therefore, the proposed project would help implement and not conflict with this strategy. |

SOURCE: CARB 2014c.

## Consideration of Attorney General 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 proposed 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 proposed project would be consistent with California's strategies to reduce GHG emissions to the levels required by AB 32. Additionally, the proposed project would comply with applicable forthcoming regulations or requirements adopted under SB 32 or imposed by the State or Federal Government to increase renewable energy generation from State utility providers, including the 2030 RPS. Therefore, considering the project's minimal annual emissions and potential reduction in overall GHG emissions from displacing fossil-fuel derived electricity with renewable sources, the proposed project would not be expected to significantly contribute to global warming or climate change.

Furthermore, as the proposed project would have an electric power generating capacity of up to approximately 44 MW-AC, the proposed project would be consistent with the Attorney General's recommended measures to reduce GHG emissions. Specifically, the proposed 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 proposed project would be compliant with the Attorney General's Recommended Measure regarding renewable energy. Because the proposed project is below regional regulatory thresholds and could result in a reduction of GHG emissions, no mitigation measures are required.

### *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 gases.

### *CARB Scoping Plan*

CARB's Scoping Plan identifies Measures and Recommended Actions that are needed to obtain AB 32 goals. Of the 39 measures identified in the CARB Scoping Plan, those that would be considered to be applicable to the proposed project are shown in **Table 4.8-5,** *Applicable Scoping Plan Strategies for Proposed Project*. These measures would primarily be those actions related to energy efficiency. A discussion of the consistency of the proposed project with these measures is provided below.

**TABLE 4.8-5: APPLICABLE SCOPING PLAN STRATEGIES FOR 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 to 50 percent by 2030. The CPUC shows that the state's three largest utilities had a 27.6 percent renewable portfolio in 2015 and are on track to meet the RPS requirement of 33 percent renewables by 2020 (CPUC 2017). A key prerequisite to reaching a target of 33 percent RPS by 2020 and 50 percent RPS by 2030 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 up to approximately 44 MW. Therefore, the proposed 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 up to approximately 44 MW. Therefore, the proposed 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 proposed project would utilize water panel washing, equipment washing, non-sanitary uses, and other miscellaneous uses, such as landscaping obtained on site from existing wells or by truck. The water using during operation of the proposed project would be used in an efficient manner to reduce impacts to local water resources.

Action CR-1 relates to energy efficiency in commercial and residential buildings. Also, Action CR-1 notes the need for more aggressive utility programs to achieve long-term energy savings. The project would result in the development of PV solar energy generating facilities that would provide renewable energy to

California Investor-Owned utilities, which in turn would be used by commercial and residential buildings in the State. Therefore, the proposed project is consistent with and would not obstruct Action CR-1.

Action H-6 relates to sulfur hexafluoride ($SF_6$) 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 $SF_6$. Consistent with this action, the proposed project would comply with any and all applicable regulatory requirements for any $SF_6$ containing switchgear.

### *Other Federal/State/Local Policies*

**Table 4.8-6**, *Project Consistency with an Applicable Plan, Policy, or Regulation for GHG Emissions*, evaluates project consistency with other applicable federal, State, and local policies regarding GHG emissions.

**TABLE 4.8-6: PROJECT CONSISTENCY WITH AN APPLICABLE PLAN, POLICY, OR REGULATION FOR GHG EMISSIONS**

| Adopted Plan, Policy, or Regulation | Consistency Determination | Proposed Project Consistency |
|---|---|---|
| **Federal** | | |
| 40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule | Not applicable | The project would have direct $CO_2e$ operating emissions that are 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 $CO_2e$ operating emissions that are well below the 100,000 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 X1-2. 33% RPS Standard; SB 350. 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.). |
| EO B-30-15. 40% below 1990 levels by 2030. | Consistent | The project would indirectly reduce GHG emissions by reducing fossil fuel combustion. |
| **Local** | | |
| Kern County General Plan - Air Quality Element Policies Goals and Implementation Measures | Consistent | 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. |

As shown in Table 4.8-6, the proposed project would fall below the annual emission triggers for compliance with federal regulations; therefore, federal regulations would not be applicable to the proposed project. As a renewable energy project, the proposed 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*).

Overall, the main objectives of the proposed project are to assist California Investor-Owned utilities in meeting their obligations under California's RPS Program and to 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 proposed project would be compliant with the applicable recommended actions of the CARB Scoping Plan as well as applicable federal, state and local policies. Specifically, the proposed 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

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 $MTCO_2e$ or more per year.

Total annual GHG emissions of 177 $MTCO_2e$ for the proposed project are shown in Table 4.8-2. In addition to these project GHG emissions, other cumulative projects in the Indian Wells Valley area listed in Table 3-5, *Cumulative Projects List*, in Chapter 3, *Project Description*, largely consist of utility-scale solar power generation facilities. The nature of these projects is such that, like the proposed project, they would be consistent with the strategies of the Climate Change Scoping Plan. In order to meet the AB 32 GHG and Executive Order B-30-15 GHG emissions reduction mandate, the Scoping Plan relies on achievement of the RPS target of 33 percent of California's energy coming from renewable sources by 2020. 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. The proposed project and other similar projects are essential to achieving the RPS.

The main contribution of GHG emissions from the proposed project would be from construction equipment usage during the construction phase and motor vehicles trips by employees during project operations. Transportation sources account for approximately 39 percent of California's total GHG emissions (CARB 2018a). The proposed 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 proposed project would result in a contribution to cumulative GHG emissions in California, operation of the proposed project could offset emissions from the electricity generation sector estimated at over 800,000 $MTCO_2e$ over its 35-year lifespan (refer to Table 4.8-3). Therefore, the total GHG construction emissions that would be associated with the proposed project could likely be offset by less than 1 month of operations. Overall, the proposed project clearly would not contribute to cumulative GHG emissions in California because operation of the project would provide electric power with negligible operational GHG emissions over the long term when compared to traditional fossil-fueled generation technologies. Thus, the proposed 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 could be offset and no mitigation is required, any other feasible reductions would be accomplished through CARB regulations adopted pursuant to AB 32 and SB 32. Cumulative impacts of the proposed 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/EA describes the affected environment and regulatory setting for hazards and hazardous materials in the proposed project study area. It also describes the proposed 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/EA for discussion on geologic hazards) and presents mitigation measures where applicable. Information in this section is based primarily on the *Phase I Environmental Site Assessment* (HDR 2017; Appendix H).

## 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, EMFs, noise, wildfires, and applicable hazards associated with agricultural activities. 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*, energy generated at the project site would be transmitted from the project site to the existing gen-tie line and substation, and would use the site access roads on private land associated with the Manzana Wind facility. A new 34.5 kV collector line would be constructed on private land between the project site and the Manzana Wind facility substation, where transformers would step up the energy from 34.5 kV to 220 kV. The energy would then be transferred to the Southern California Edison (SCE) Whirlwind Substation using the existing Manzana Wind facility 220 kV generation tie (gen-tie) line.

### Existing Setting

The project site consists of an irregularly shaped boundary that comprises approximately 383 acres of undeveloped land sparsely covered by desert vegetation. Currently, the area immediately south of the project site includes the Manzana Wind operations and maintenance (O&M) building and a portion of the site has been used as a laydown area associated with the Manzana Wind facility, including a water storage tank, aboveground propane tanks, shipping containers, and electrical transformers (HDR 2017). The area surrounding the project site is similarly undeveloped with a few scattered residential land uses with the closest to the site being approximately 1.2 miles away. The closest school to the project site is Tropico Middle School, located approximately 16 miles southeast of the project site in the community of Rosamond. The project site is located approximately 14 miles west of the Rosamond Skypark, a privately owned and operated residential skypark and 18 miles northwest of the General William J. Fox Airfield, the closest publicly owned airport. State Route (SR) 138 is located 8 miles south of the project site, and SR-14 is located approximately 15 miles east of the site.

# Hazardous Materials and Waste

A hazardous material is any substance that, because of its quantity, concentration, or physical or chemical properties, may pose a hazard to human health and the environment. Under Title 22 of the California Code of Regulations (CCR), the term "hazardous substance" refers to both hazardous materials and hazardous wastes. Both of these are classified according to four properties: (1) toxicity; (2) ignitability; (3) corrosiveness; and (4) reactivity (22 CCR 11, Article 3).

A hazardous material is defined as a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either: (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (22 CCR 66260.10).

Various forms of hazardous materials can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Hazards to human health and the environment can occur during production, storage, transportation, use, or disposal of hazardous materials. As part of the site reconnaissance completed for the Phase I environmental site assessment of the site, the only hazardous materials observed were associated with an O&M building and laydown yard located adjacent to the south end of the project site (HDR 2017). The office building was noted to include maintenance vehicle parking, equipment storage, and a hazardous materials/waste storage area. The hazardous materials/waste storage area contained cleaning products, solvents, antifreeze, lubricating oil, and spent lubricating oil (HDR 2017). A propane aboveground storage tank was located on the northern side of the laydown yard. These facilities are associated with the Manzana Wind project.

# Photovoltaic Solar Panels and Cadmium Telluride

The photovoltaic (PV) solar panels that would be installed on the project site are made from polycrystalline silicon or thin-film technology. Polycrystalline silicon PV panels may include small amounts of solid materials that are considered to be hazardous. Because such materials are in a solid and non-leachable state, broken polycrystalline silicon PV panels would not be a source of pollution to surface water, stormwater, or groundwater. Polycrystalline silicon panels removed from the site would be recycled or otherwise disposed at an appropriate waste disposal facility.

The thin-film PV solar modules that could be installed on the project site use Cadmium Telluride (CdTe) technology. The semiconductor layer in the modules is in the environmentally stable form of a compound rather than the leachable form of a metal. The CdTe compound is encapsulated in the PV module with the PV module containing less than 0.1 percent Cd content by weight. Because of optimal optical properties, only a 3-micron-thin layer of CdTe is used to absorb incident sunlight, with Cd content per 8 square feet of PV module less than that of one C-size flashlight NiCd battery.

It has been demonstrated that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil. 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

As part of the Phase I Environmental Site Assessment, historical aerial photographs and topographic maps were reviewed in an attempt to establish a history of land uses at the site (HDR 2017). The historical aerial photographs depict the project site and surrounding parcels as generally undeveloped prior to 2010, with unimproved gravel roads on the site and surrounding area. Structures associated with the Manzana Wind facility were present on the project site in the 2012 aerial photograph even though development of the wind farm began in 2008. The historical topographic maps depict the project site and surrounding area as generally undeveloped, with several unimproved roads noted throughout the area. In addition, the Phase I report indicates that prior uses of the site have included agriculture, which according to the aerial photographs would likely have been related to grazing as opposed to cropland.

# 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.

The project proposes facilities, including an energy storage facility, to connect to an existing substation at the Manzana Wind Facility. The energy storage technology for the storage facility has not been determined at this time but could include any commercially available battery technology, such as, but not limited to, lithium iron, lead acid, sodium sulfur, and sodium or nickel hydride. The power generated from the site

would use the existing infrastructure associated with the Manzana Wind facility that ultimately connects to the existing SCE Whirlwind substation. The alignment is discussed further in more detail in Chapter 3, *Project Description*, of this EIR/EA, and shown in Figure 3-3, *Flood Hazard Zones*.

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.

# Increase in Ambient Temperatures

All exposed surfaces (e.g., houses, cars, rocks) absorb heat produced by the sun. A "heat island" effect is generated when cities cover miles of land with structures (e.g., concrete buildings and asphalt roads) that absorb and store significantly more heat during the day than undeveloped earth. Additionally, these cities are filled with energy-consuming devices (e.g., engines, appliances, and heating, air-conditioning, and ventilation [HVAC] systems) that generate waste heat.

Solar arrays consist of PV panels mounted on aluminum and steel support structures. The support 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 proposed 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 proposed project would increase ambient air temperatures at or around the project site.

# Increased Noise

Noise from project construction would be temporary over a period of up to 6 to 9 months. The ambient noise regime in the project vicinity consists of undeveloped, wind farm, and agricultural uses and is a relatively quiet noise environment. The nearest sensitive noise receptors to the proposed project are isolated residential land uses. As discussed in detail in Section 4.13, *Noise*, of this EIR/EA, due to the relatively quiet noise environment in the project area associated with the current undeveloped, wind farm and

agricultural uses, temporary or periodic increases in ambient noise levels caused by construction activities could occur at these receptors. However, these increases would be temporary and would not disrupt or otherwise adversely affect residential uses in the area.

## Hazardous Materials Transportation

SR-138 is approximately 8 miles south of the site and is the closest significant transportation route. The second nearest significant transportation route, SR-14, is approximately 15 miles east 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 is designated as an adopted commercial hazardous materials shipping route.

## Airports

The project site is located approximately 14 miles west of the Rosamond Skypark, a privately owned and operated residential skypark, and 18 miles northwest of the General William J. Fox Airfield, the closest publicly owned airport. The project is not located within an Airport Influence Area, per the Kern County Airport Land Use Compatibility Plan.

## Fire Hazard Areas

The California Department of Forestry and Fire Prevention requires counties within the state to develop fire protection management plans that address potential threats of wildland fires. The Kern County Wildland Fire Management Plan identifies federal, state, and local responsibility areas for the entire County to facilitate coordination efforts for fire protection services. The project site is sparsely vegetated and not within an area identified by the California Department of Forestry and Fire Protection as having substantial or very high fire risk, as determined by the Kern County General Plan or CAL FIRE (CAL FIRE 2007).

# 4.9.3 Regulatory Setting

## Federal

### U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) was established in 1970 to consolidate in one agency a variety of federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. The USEPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends. The USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and

setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for using permits and for monitoring and enforcing compliance. Where national standards are not met, the USEPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

## Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the USEPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act which affirmed and extended the "cradle-to-grave" system of regulating hazardous wastes.

## Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," were enacted by Congress on December 11, 1980. This law (42 United States Code [USC] 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (Title 40, Code of Federal Regulations [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

## Clean Water Act/Spill Prevention, Control, and Countermeasure Rule

The Clean Water Act (CWA) (33 USC 1251 et seq., formerly known as the Federal Water Pollution Control Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the United States. As part of the CWA, the USEPA oversees and enforces the Oil Pollution Prevention regulation contained in 40 CFR 112, which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend, and implement spill prevention, control, and countermeasure (SPCC) plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total aboveground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "navigable waters" of the United States.

## Other Regulations

Other federal regulations overseen by the USEPA relevant to hazardous materials and environmental contamination include 40 CFR Parts 100 to 149 – Water Programs, 40 CFR Parts 239 to 259 – Solid Wastes,

and 40 CFR Parts 260 to 279 – Hazardous Waste. These regulations designate hazardous substances under the CWA; determine the reportable quantity for each substance that is designated as hazardous; and establish quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

### Occupational Safety and Health Administration

The Occupational Safety and Health Administration's (OSHA's) mission is to ensure the safety and health of U.S. workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. The OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR 1910.

## State

### California Public Utilities Commission General Order 95: Rules for Overhead Electric Line Construction

General Order 95 (GO 95) is the key standard governing the design, construction, operation, and maintenance of overhead electric lines within the State of California. It was adopted in 1941 and updated most recently in 2012. GO 95 includes safety standards for overhead electric lines, including minimum distances for conductor spacing, minimum conductor ground clearance, and standards for calculating maximum sag, electric line inspection requirements, and vegetation clearance requirements. The latter, governed by Rule 35, and inspection requirements, governed by Rule 31.2, are summarized below:

- **GO 95:** Rule 35, *Tree Trimming*, defines minimum vegetation clearances around power lines. 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 220-kiloVolt (kV) lines.
- **GO 95:** Rule 31.2, *Inspection of Lines*, requires that lines be inspected frequently and thoroughly for the purpose of ensuring that they are in good condition, and that lines temporarily out of service be inspected and maintained in such condition so as not to create a hazard.

### Power Line Hazard Reduction (PRC 4292)

PRC 4292 requires a 10-foot clearance around any tree branches or ground vegetation at the base of power poles carrying more than 110 kV. The firebreak clearances required by PRC 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of PRC 4296. 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 Hazardous Materials Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

## Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to but more stringent than the federal RCRA program. The act is implemented by regulations contained in Title 26 CCR, which describes the following required aspects for the proper management of hazardous waste:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;

- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the California Department of Toxic Substances and Control (DTSC).

## Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Senate Bill 1082 (1993) created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), which requires the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are as follows:

- Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs (i.e., Tiered Permitting);
- Aboveground Petroleum Storage Tank Program;
- Hazardous Materials Release Response Plans and Inventory Program (i.e., Hazardous Materials Disclosure or "Community-Right-To-Know");
- California Accidental Release Prevention Program (Cal ARP);
- Underground Storage Tank (UST) Program; and
- Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses in complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA.

## California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) was created in 1991 and unified California's environmental authority in a single cabinet-level agency and brought the California Air Resources Board State Water Resource Control Board (SWRCB), Regional Water Quality Control Board CalRecycle, DTSC, Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency. These agencies were placed within the Cal/EPA "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of state resources. Their mission is to restore, protect, and enhance the environment and to ensure public health, environmental quality, and economic vitality.

## Department of Toxic Substances and Control

DTSC, a department of Cal/EPA, is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. DTSC regulates hazardous waste primarily under the authority of the federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, 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, U.S. Department of Health Services lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks or a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

## California Office of Emergency Services

To protect public health and safety, and the environment, the California Office of Emergency Services (OES) is responsible for establishing and managing statewide standards for business and area plans relating to the handling and release, or threatened release, of hazardous materials. The OES requires that basic information on hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and health risks) be available to firefighters, public safety officers, and regulatory agencies. Typically, this information should be included in business plans to prevent or mitigate damage to the health and safety of persons and the environment from the release or threatened release of these materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code, Article 1 – Hazardous Materials Release Response and Inventory Program (Sections 25500 to 25520) and Article 2 – Hazardous Materials Management (Sections 25531 to 25543.3).

Title 19 CCR, Public Safety, Division 2, Office of Emergency Services, Chapter 4 – Hazardous Material Release Reporting, Inventory, and Response Plans, Article 4 (Minimum Standards for Business Plans) establishes minimum statewide standards for hazardous materials business plans. These plans must include the following: (1) a hazardous material inventory in accordance with Sections 2729.2 to 2729.7, (2) emergency response plans and procedures in accordance with Section 2731, and (3) training program information in accordance with Section 2732. Hazardous materials business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state. Each business will prepare a hazardous materials business plan if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- A hazardous compressed gas in any amount
- Hazardous waste in any quantity

## California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

## California Highway Patrol

A valid Hazardous Materials Transportation License, issued by the CHP, is required by the laws and regulations of State of California Vehicle Code Section 3200.5 for transportation of either:

- Hazardous materials shipments for which the display of placards is required by state regulations
- 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 proposed project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the proposed 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*

### 1.1 Physical Constraints

#### *Policies*

Policy 1: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.

Policy 4: Kern County building, health, and fire codes and standards shall be strictly enforced to minimize the possibility of hazards relevant to certain physical constraints.

### 1.2 Public Facilities

#### *Policy*

Policy 7: New development will be required to demonstrate the availability of adequate fire protection and suppression facilities.

## *Chapter 2. Circulation Element*

### 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 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

***Policy***

Policy 2: Innovative technologies to manage hazardous waste streams generated in Kern County will be encouraged.

***Implementation Measure***

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent 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.

## 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 therefore.

# Kern County Fire Department Unit Strategic Fire Plan

The Kern County Fire Department (KCFD) Unit Strategic Fire Plan, adopted in March of 2018 is the most current document that assesses the wildland fire situation throughout the state responsibility area (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 California Fire Code and Kern County Ordinance and is an official interpretation of the Kern County Fire Marshal's Office. The standard outlines installation requirements for photovoltaic ground-mounted and roof-mounted solar panels. The proposed project would mount systems for the modules on steel support posts that would be pile driven into the ground and would therefore comply with the ground mounted requirements of this fire prevention standard. Ground mounted solar panel requirements of this standard include water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD, 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, underground

storage tanks, hazardous waste treatment, hazardous waste generators, hazardous materials management and response plans, and the California Fire Code). This Department also provides emergency response to hazardous materials events, performing health and environmental risk assessment and substance identification.

### Kern County and Incorporated Cities Hazardous Waste Management Plan

In response to the growing public concern regarding hazardous waste management, State Assembly Bill 2948 enacted legislation authorizing local governments to develop comprehensive hazardous waste management plans. The intent of each plan is to ensure that adequate treatment and disposal capacity is available to manage the hazardous wastes generated within the local government's jurisdiction.

The Kern County and Incorporated Cities Hazardous Waste Management Plan (Hazardous Waste Plan) was first adopted by Kern County and each incorporated city before September 1988 and was subsequently approved by the 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 effect comprehensive hazardous waste management throughout Kern County. The action program focuses on development of programs to equitably site needed hazardous waste management facilities; to promote onsite source reduction, treatment, and recycling; and to provide for the collection and treatment of hazardous waste from small-quantity generators. An important component of the Hazardous Waste Plan is the monitoring of hazardous waste management facilities to ensure compliance with federal and state hazardous waste regulations.

## 4.9.4 Impacts and Mitigation Measures

## Methodology

The methodology for determining impacts relating to hazardous materials focuses on (1) the potentially significant impacts related to the routine transport, use, or disposal of hazardous materials and the release of hazardous materials into the environment; and (2) proposed project components that could result in environmental contamination. The analysis is also based on the findings from the *Phase I Environmental Site Assessment* (HDR 2017; Appendix H).

The methodology for determining impacts relating to wildland fires focuses on the fire severity at the project site and the surrounding areas based on existing state and local maps and land characteristics.

# Thresholds of Significance

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

A project could have a significant impact related to hazards and hazardous materials if it would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

c. Emit hazardous emissions or involves handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school;

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

e. For a project located within the adopted Kern County Airport Land Use Compatibility Plan, would the project result in a safety hazard or excessive noise for people residing or working in the project area;

f. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan;

g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires;

h. Implementation of the project generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, would the project exceed the following qualitative threshold.

   The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:

   i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment;

   ii. Are associated with design, layout, and management of project operations;

   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.

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/EA. Please refer to Appendix A of this EIR/EA for a copy of the NOP/IS and additional information regarding these issue areas:

c. Emit hazardous emissions or involves handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school;

d. Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

e. For a project located within the adopted Kern County Airport Land Use Compatibility Plan and would result in a safety hazard for people residing or working in the project area;

f. Impair implementation of, or physically interferes with, an adopted emergency response plan or emergency evacuation plan;

h. Implementation of the project generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, would the project exceed the following qualitative threshold.

   The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:

   i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment;

   ii. Are associated with design, layout, and management of project operations;

   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, including the solar facilities and associated improvements (e.g., energy storage, access roads), would not involve the routine transport, use, or disposal of significant (i.e., bulk) quantities of hazardous materials. Construction would however, require the use of limited quantities of hazardous materials such as fuels, oils, lubricants, solvents, detergents, degreasers, paints, ethylene glycol, dust palliative, pesticides, herbicides, and welding materials/supplies. Most of the hazardous waste generated by the proposed project would occur during the temporary construction period and would consist of liquid waste, including cleaning fluids, dust palliative, herbicides, and solvents. Some solid hazardous waste, such as welding materials and dried paint, may also be generated during construction. Any hazardous materials that would be transported to the project site during construction, and any hazardous materials that are produced as a result of the construction of the proposed project would be collected and transported away from the site in accordance with best management practices (BMPs) (see further discussion of BMP requirements in Section 4.10, *Hydrology and Water Quality*, of this EIR/EA). During construction of the proposed project, material safety data sheets for all applicable hazardous materials present at the site would be made readily available to onsite personnel. 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.

Fuels and lubricants used on field equipment would be subject to the Material Disposal and Solid Waste Management Plan, SPCC Plan, and other measures to limit releases of hazardous materials and wastes. 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 oils, lubricants, and spent filters would be performed in accordance with applicable regulations including the requirements of licensed receiving facilities. Overall, the relatively limited use of hazardous materials during construction would be controlled through compliance with applicable regulations and would result in a less-than-significant impact.

## Operation

O&M activities associated with a PV solar facility are relatively minor when compared to other land uses such as conventional power plants, and would require limited use of hazardous materials. Any hazardous materials to be used would be stored onsite and in designated areas. The site would be fenced to prevent public access to hazardous materials and the PV panels. However, if not handled appropriately, the use of hazardous materials on the site could result in adverse effects to workers, the public or the environment.

Operational activities are limited to monitoring plant performance, conducting scheduled maintenance for onsite electrical equipment, and responding to utility needs for plant adjustment. No heavy equipment would be used 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 would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to workers or the public.

The PV modules that would be installed on the project site use CdTe thin-film technology. CdTe is generally bound to a glass sheet by a vapor transport deposition during the manufacturing process, followed by sealing the CdTe layer with a laminate material and then encapsulating it in a second glass sheet. The modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions. The PV modules conform to the International Electrotechnical Commission (IEC) test standards IEC 61646 and IEC61730 PV as tested by a third-party testing laboratory certified by the IEC. In addition, the PV 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. 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.

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 in accordance with the hazardous materials business plan required by Mitigation Measure MM 4.9-1.

Project operations could require the use of hazardous materials at the energy storage facility which would contain battery acids, as well as lead acid, sodium sulfur, and sodium or nickel hydride. All transformers would be equipped with spill containment areas and battery storage would 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. There are no designated routes for the transport of hazardous materials located on or immediately adjacent to the project site; the closest routes are SR-138 and SR-14. In addition, implementation of Mitigation Measure MM 4.9-1, which ensures the preparation of a hazardous materials business plan, already required by law, 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 further reduce impacts related to hazards to a less-than-significant level.

Further, implementation of the proposed project would not result in the significant risk of EMFs associated with overhead power lines, as the project would connect into the existing infrastructure (i.e. the Manzana substation, 230 kV gen-tie line, and Whirlwind substation). In addition, the proposed project would not construct new power lines beneath or near existing sensitive uses. As the state has not adopted any specific limits or regulations regarding EMF levels due to a lack of established scientific basis for setting such limits 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, transformer pads, telecommunications equipment, and other 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 solar modules would include removal of the racks on which the solar panels are attached, and their placement in secure transport crates and a trailer for storage, for ultimate transportation to another facility.

Once the PV modules have been removed, the racks would be disassembled, and the structures supporting the racks would be removed. All other associated site infrastructure would be removed, including fences, concrete pads that may support the inverters, transformers and related equipment, and underground conduit/electrical wiring. The fence and gate would be removed, and all materials would be recycled to the extent feasible. The area would be thoroughly cleaned and all debris removed. As discussed above, most panel materials would be recycled, with minimal disposal to occur in landfills in compliance with all applicable laws. The PV module manufacturer would likely provide CdTe module collection and recycling services. In any case, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, which means they would not pose a significant risk for cadmium leaching if they reached a landfill.

Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules. These studies have consistently concluded that during normal operations, CdTe PV modules do not present an environmental risk. CdTe releases are also unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe (Fthenakis, 2003).

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.

## Mitigation Measures

**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 and the Bureau of Land Management (BLM) for inclusion in the projects permanent record.

Implementation of Mitigation Measure MM 4.17-1 would also be required.

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1 and MM 4.17-1, impacts would be reduced to 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, which as of January 1, 2020 will be 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 known active or abandoned oil wells. 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 proposed project includes the accidental release of materials, such as fuels, oils, lubricants, solvents, detergents, degreasers, paints, ethylene glycol, dust palliative, herbicides, and welding materials/supplies. 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 site, construction workers and nearby sensitive receptors could be exposed to pollutant emissions during construction of the proposed 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 processes if hazardous materials are not used appropriately during construction. Implementation of Mitigation Measure MM 4.9-2, which regulates the site-specific use of hazardous materials as provided below, would reduce impacts related to upset and accident conditions to a less-than-significant level.

# Operation

Operation of the PV modules and inverters would produce no hazardous waste during operation. Each enclosed transformer would include mineral oil, but 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 PV panels. Similarly, fire damage would not result in the release of hazardous materials. The polycrystalline silicon PV panel does not pose a threat to residences in the vicinity of the site for these reasons.

CdTe releases are unlikely to occur from accidental breakage of or fires involving the PV modules. CdTe is a highly stable semiconductor compound due to strong chemical bonding that translates to extremely low

solubility in water, low vapor pressure, and a melting point greater than 1,000˚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. 2011)

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, 1 percent over 25 years, which translates to an average of 0.04 percent per year. This breakage rate is an overestimate because over one-third of PV module breakage occurs during shipping and installation. Modules that break during shipping and installation are removed from the construction site and returned to a manufacturing facility for recycling. Even if the CdTe semiconductor layer becomes exposed to the environment, it strongly resists being released from the PV module into the environment, and CdTe has an extremely low solubility in water.

The CdTe PV modules do not pose a threat to nearby residences. The use of CdTe PV modules at the project site would not result in human or aquatic exposure of cadmium. A recent research article, Fate and Transport Evaluation of Potential Leaching Risks from Cadmium Telluride Photovoltaics (Sinha et al. 2011), 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 pesticide and herbicide use during both construction and operation. If not handled properly, use of these products could create a hazard to the public (construction workers, maintenance employees, and nearby residences), resulting in a potentially significant impact. Mitigation Measure MM 4.9-2 would reduce impacts related to use of pesticides and herbicides to a less-than-significant level.

Operation of the proposed project would not involve the routine transport, use, or disposal of substantive quantities of hazardous materials or wastes. The closest designated route for the transport of hazardous materials is SR-138, which is located 3 miles south of the project site. Adherence to regulations and standard protocols during the storage, transportation, and usage of any incidental hazardous materials used during operation and maintenance (O&M) activities would minimize and avoid the potential for significant impacts.

Overall, adherence to regulations and standard protocols during the storage, transportation, and usage of hazardous materials, along with implementation of Mitigation Measure MM 4.9-2, would minimize or reduce potential impacts to a less-than-significant level.

## Decommissioning and Disposal

The decommissioning and disposal process is described under Impact 4.9-1, above. Most panel materials would be recycled to the extent feasible, with minimal disposal to occur in landfills in compliance with all applicable laws. The PV module manufacturer provides CdTe module collection and recycling services. In any case, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. Batteries within the energy storage facility would also be recycled to the extent feasible, with minimal landfill disposal.

Mitigation Measure 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*

**MM 4.9-2:** The project proponent shall continuously comply with the following:

a) The construction contractor or project personnel shall use herbicides that are approved for use in California, and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use). Personnel applying herbicides shall have all appropriate state and local herbicide applicator licenses and comply with all state and local regulations regarding herbicide use.

b) Herbicides shall be mixed and applied in conformance with the manufacturer's directions.

c) The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and material safety data sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife.

d) Products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water.

e) Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated.

f) A written record of all herbicide applications on the site, including dates and amounts shall be furnished to the Kern County Planning and Natural Resources Department and the Bureau of Land Management (BLM).

Implementation of Mitigation Measures MM 4.9-1 and MM 4.17-1 would also be required.

## 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 reduced to less than significant.

### Impact 4.9-3: The project would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

The project site is not within an area of high or very high fire hazard, as determined by the Kern County General Plan or CAL FIRE (CAL FIRE 2007). 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 proposed project would also include a battery storage system, 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 chemicals, carbon dioxide ($CO_2$), and foam are the preferred methods for extinguishing a fire involving batteries as water is not useful in extinguishing battery fires. As also discussed further in Section 4.14, *Public Services*, of this EIR/EA, the project proponent would implement Mitigation Measure MM 4.14-1, which would require the preparation and submittal of a Fire Prevention Plan to the County and the County Fire Protection District for approval. The purpose of the Fire Prevention Plan would be to reduce causes of fire, and 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 OSHA's standard of fire prevention, 29 CFR 1910.39. The Fire Prevention Plan would address fire hazards of the different components of the proposed project, including the battery storage component, and would include BMPs to reduce the potential for fire and extinguishment techniques if a fire were to occur.

The project site is not adjacent to urbanized areas; however, there are isolated residences in the proximity of the project site. While the proposed project is not anticipated to significantly increase the risk of wildfire, Mitigation Measure MM 4.14-1, in EIR/EA Section 4.14, *Public Services*, would be implemented which includes the development and implementation of a Fire Safety Plan for construction and operation of the proposed 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.

## Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts would be reduced to 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 and northern Los Angeles County. Many are located, like the project site, in the Antelope Valley and Mojave Desert. As shown in Table 3-5, *Cumulative Project List*, approximately nine solar energy projects are proposed within Kern County. The geographic scope of impacts associated with hazardous materials generally encompasses the project site and a 0.25-mile-radius area around the project sites. A 0.25-mile-radius area allows for a conservative cumulative analysis that ensures that all potential cumulative impacts will be assessed. Hazards and exposure risks related to hazards and hazardous materials are typically localized in nature since they tend to be related to isolated events and 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.

Impacts regarding the handling, use, and/or storage of hazardous materials would be considered project specific and would not cumulatively contribute with other cumulative projects because of the relatively low quantities involved in the proposed project and the majority of other cumulative projects as well as the inherent variance in timing of handling of hazardous materials and wastes. 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. In general, accidental releases and upset conditions tend to be localized events that do not combine with other projects especially considering how spread out the cumulative projects are. Therefore, the proposed project would not contribute to cumulative impacts from accidental releases or discovery of hazardous materials and/or wastes. Conformance with existing State and County regulations, as well as project safety design features and the implementation of Mitigation Measures MM 4.9-1 and MM 4.9-2 identified above would further reduce cumulative impacts. In addition, implementation of appropriate safety measures during construction of the proposed project, as well as other cumulative projects, would reduce the impact to a level that would not contribute to cumulative effects. Given the minimal risks of hazards at the project site, cumulative impacts are unlikely to occur. Therefore, impacts would not be cumulatively significant.

Hazardous materials to be used during decommissioning and removal activities are of low toxicity and would consist of fuels, oils, and lubricants. Because these materials are required for operation of construction vehicles and equipment, BMPs would be implemented to reduce the potential for or exposure to accidental spills or fires involving the use of hazardous materials. Impacts from minor spills or drips would be avoided by thoroughly cleaning up minor spills as soon as they occur. While foreseeable projects have the potential to cause similar impacts, it is assumed these projects would also implement similar BMPs. Conformance with existing state and county regulations, as well as implementation of Mitigation Measures MM 4.9-1 and MM 4.9-2, MM 4.14-1, of Section 4.14, *Public Services* (Fire Prevention Plan) and MM 4.17-1, of Section 4.17, *Utilities and Service Systems* (recycling of debris and waste) would further reduce the potential for cumulative impacts. In addition, implementation of appropriate safety measures during construction of the proposed project, as well as any other cumulative project, would reduce the impact to a level that would not contribute to cumulative effects. Therefore, impacts related to hazardous materials would not be cumulatively significant.

The project site is not located within any airport land use plans or within close proximity to any private airstrips, and therefore would not have the potential to combine with impacts from other projects to pose a hazard to air navigation. The project would be in compliance with county zoning requirements as required.

### *Mitigation Measures*

Implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.14-1, and MM 4.17-1 would be required.

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.14-1, and MM 4.17-1, cumulative impacts would be reduced to less than significant.

Section 4.10
# Hydrology and Water Quality

## 4.10.1 Introduction

This section of the EIR/EA describes the hydrological environmental and regulatory settings, addresses potential impacts of the proposed project on hydrology and water quality, and discusses mitigation measures to reduce impacts, where applicable. The information in this section is based on numerous available sources, as well as the California Environmental Quality Act (CEQA)-Level Geotechnical Desktop Study (Appendix G, Barr 2017); the Preliminary Drainage Report (Appendix I-1; Aztec 2016a); the Water Demand Memorandum, (Appendix I-2, Aztec 2016b); and a Water Supply Assessment (Appendix I-3, AECOM 2019) prepared for the proposed project.

## 4.10.2 Environmental Setting

As described in Chapter 3, *Project Description*, energy generated at the project site would be transmitted from the project site to the existing transmission line, substation, and use the site access roads on private land associated with the Manzana Wind Facility (Manzana Facility). A new 34.5 kilovolt (kV) collector line would be constructed on private land between the Camino Solar site and the Manzana Wind Facility substation, where transformers would step up the energy from 34.5 kV to 220 kV. The energy would then be transferred to the Southern California Edison (SCE) Whirlwind Substation using the existing Manzana Wind Facility 220 kV generation tie (gen-tie) line.

### Regional Setting

The project site is located in the northern region of the Mojave Desert Basin, which is defined by surrounding mountain ranges that help create its generally dry conditions. The basin contains numerous mountain ranges that create valleys, closed drainage basins, salt pans, and seasonal saline lakes when precipitation is high enough. Most of the valleys are internally drained, resulting in a closed system where all precipitation that falls within the valley does not find its way to the ocean. The project site is located in the Western Antelope Valley, a desert region that is formed from the triangular formation of the Garlock and San Andreas faults.

#### Antelope Valley Hydrologic Unit (No. 626.00-626.80)

The project site is located in the Antelope Valley Hydrologic Unit (HU) in the southwestern corner of the Regional Water Quality South Lahontan Hydrologic Region. The Antelope Valley HU covers approximately 1.5 million acres (2,400 square miles) in the southwestern part of the Mojave Desert in southern California. The Antelope Valley HU is mostly located in Los Angeles County and Kern County, with a small part in San Bernardino County. Bounded by the San Gabriel Mountains to the south and southwest, the Tehachapi Mountains to the northwest, and a series of hills and buttes that generally follow the San Bernardino County Line to the east, the Antelope Valley HU forms a well-defined triangular point

at its western edge. The Antelope Valley HU elevation ranges from 2,300 to 3,500 feet above mean sea level (amsl).

The Antelope Valley HU does not outlet to the Pacific Ocean. Numerous streams originating in the mountains and foothills either infiltrate into the groundwater basin, evaporate, or flow across the valley floor to eventually pond in the dry lakes near the community of Rosamond and Edwards Air Force Base. The Antelope Valley HU generally lacks defined natural and improved channels outside of the foothills and is subject to unpredictable sheet flow patterns. In general, groundwater flows northeasterly from the mountain ranges to the dry lakes. Due to the relatively impervious nature of the dry lake soil and high evaporation rates, water that does not infiltrate into the subsurface enroute and actually collects on the dry lakes eventually evaporates rather than infiltrating into the groundwater beneath the lakes.

Within the Antelope Valley HU, the project site is located in the Willow Springs Hydrologic Area (HA). The drainage features associated with the Willow Springs HA are minor surface waters and washes that are not well defined. Much of the runoff occurs as sheet flow.

# Climate

The climate of the Mojave Desert Basin is characterized by hot, dry summers and cold winters with relatively low annual precipitation. Average temperatures recorded in the community of Mojave range from a low of 33º Fahrenheit (F) in December to highs of 98º F in July and August (Western Regional Climate Center 2019). The local climate is typical of the high desert areas of California. Winter nights often drop below freezing, and snow is not uncommon. **Table 4.10-1**, *Average Monthly Temperatures and Precipitation for the Antelope Valley, Kern County*, summarizes average temperatures and precipitation for Mojave, CA, which is located approximately 15 miles northeast of the project site, but which can be considered typical of the Antelope Valley, including the project area.

**TABLE 4.10-1: AVERAGE MONTHLY TEMPERATURES AND PRECIPITATION FOR THE ANTELOPE VALLEY, KERN COUNTY**

| Station | Elevation | Average Maximum Temperature | Average Minimum Temperature | Average Annual Precipitation |
|---|---|---|---|---|
| Mojave, CA (Coop ID 045756) | 2,735 feet | 75.8°F | 49.9°F | 5.93 in/yr |
| Mojave 2 Ese, CA (Coop ID 045758) | 2,680 feet | 76.5°F | 47.8°F | 6.34 in/yr |

SOURCE: Western Regional Climate Center, 2019.

# Site Hydrology

## Surface Hydrology and Drainage

The project site is undeveloped desert land that is relatively flat, sloping gently from north to south (Aztec 2016a). The site is located at the base of the Tehachapi Mountains on an alluvial fan where runoff flows from the upper mountain regions across the alluvial fans as sheet flow in drainage channels that are not well defined due to low precipitation and sporadic flows. According to surveys conducted on the site, there are four linear drainages on the BLM-administered parcel of the project site that are potentially subject to the

jurisdiction of the California Department of Fish and Wildlife and the Regional Water Quality Control Board (RWQCB) (see further discussion in Section 4.4, *Biological Resources*). There is no active flowing water on the site. Most drainage flow originating in the study area infiltrates into the soil in the vicinity of the study area. During prolonged extreme storm events, water flows may reach Rosamond Lake. Existing drainage on site generally follows the contours of the land, with stormwater flows occurring as sheet flow from north to south. Much of the surrounding area in the vicinity of the project site consists of a mix of agricultural grazing, undeveloped land, scattered single family residences, and commercial wind projects. Downstream of the proposed project area, during major storm events, overland flow is anticipated to continue in a generally south to southeasterly direction.

### Floodplains

The project site is located within the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) map number 06029C3625E, effective September 26, 2008. The site is located entirely within Flood Zone "X", areas of minimal flooding and no standing water (Aztec 2016a).

### Soil Types and Erosion

Soil types were taken from the published survey by the National Resources Conservation Service (NRCS) Soils Survey for the Antelope Valley Area. There are three main soil types for the site, all falling in Hydrologic Soils Group A, consistent with well-drained alluvial fans, and they include Arizo gravelly loamy sand, Cajon loamy sand, Hanford coarse sandy loam, gravelly sandy loam, and Ramona sandy loam (Barr 2017 and Aztec 2016a). Group A soils have a high infiltration rate and low runoff potential when thoroughly wet. These consist mainly of 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. Surface soils with higher amounts of clay tend to be less erodible as the clay acts as a binder to hold the soil particles together.

## Groundwater Resources

### Antelope Valley Groundwater Basin

The project area is situated within the Antelope Valley Groundwater Basin, which underlies an extensive alluvial valley in the western Mojave Desert. The elevation of the valley floor ranges from 2,300 to 3,500 feet amsl. The basin is bounded on the northwest by the Garlock fault zone at the base of the Tehachapi Mountains, approximately 2 miles from the project site, and on the southwest by the San Andreas fault zone at the base of the San Gabriel Mountains, approximately 8 miles from the project site. The basin is bounded on the east by ridges, buttes, and low hills that form a surface and groundwater drainage divide and on the north by Fremont Valley Groundwater Basin at a groundwater divide approximated by a southeastward-trending line from the mouth of Oak Creek through Middle Butte to exposed bedrock near Gem Hill, and by the Rand Mountains farther east (DWR 2004).

The basin is divided by the U.S. Geological Survey (USGS) into 12 subunits based on differential ground flow patterns, recharge characteristics, and geographic location, as well as by controlling geologic structures. The basin's 12 subunits include Finger Buttes, West Antelope, Neenach, Willow Springs, Gloster, Chaffee, Oak Creek, Pearland, Buttes, Lancaster, North Muroc, and Peerless. The USGS describes

groundwater levels in these subunits as having rebounded from previous draw-down levels in some areas due to the importation of State Water Project water to the Antelope Valley region and declined in others due to increased groundwater pumping.

Groundwater in the basin is used for both public water supply and local irrigation. The main aquifers in the basin are gravels, sands, silts, and clays, all derived from granitic parent material from the surrounding mountains. Public-supply wells in the basin are anywhere from 360 to 700 feet deep. Groundwater recharge in the Antelope Valley is primarily runoff from surrounding mountains, as well as direct infiltration from irrigation, sewer, and septic systems.

As described above, the project site is located within the Willow Springs subunit of the basin, northeast of the Neenach subunits, which reportedly has groundwater wells that draw from depths ranging between 200 to 300 feet below surface level (Aztec 2016b). Based on well data reviewed by the Watermaster Engineer for Antelope Valley, groundwater level data in the Willow Springs subunit was sparse but showed rising water levels between 2016 and 2017 (Todd Engineers 2017). Groundwater in the site vicinity appears to flow to the east toward Rosamond Lake. Some abandoned residential units are located in the area of the site and an existing well is just north of the project boundary but now either idle or abandoned. Water supply wells that could be sources of water supply for the proposed project are located in the Oak Creek (Cal Portland Well) and Neenach (T09NR14W22A1 and T09NR14W22B1 wells) subbasins (AECOM 2019).

According to the USGS, groundwater extraction in the basin prior to 1972 provided more than 90 percent of the of the total water supply in Antelope Valley. Some areas experienced groundwater level declines of up to 200 feet and land subsidence of more than 6 feet in some areas (Aztec 2016b). The groundwater basin is primarily recharged by deep percolation of precipitation and runoff from the surrounding mountains and hills. Other sources of recharge to the basin include artificial recharge and return flows from agricultural irrigation and urban irrigation.

To correct the state of overdraft, an adjudication process was settled on December 23, 2015 (see additional discussion below under *Regulatory Setting*). As a result of the court decision, the court directed appointment of a Watermaster (a five-member board) to monitor the groundwater basin in accordance with court requirements. The Watermaster Board was tasked with arriving at a unanimous decision to hire the engineer to serve as Watermaster Engineer (Todd Groundwater) and assign pumping allocations per user that will be metered and monitored on an annual basis. It is expected that there will be no charge for pumpage that does not exceed the assigned allocation. Pumping in excess of the allocation will require payment of a replenishment fee to the watermaster for acquisition of additional supplies.

# 4.10.3 Regulatory Setting

## Federal

### Clean Water Act

The Clean Water Act (CWA) (33 U.S. Code Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of 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 then 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 1 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. Projects that disturb 1 or more acres, including the proposed project, are required to obtain NPDES coverage under the Construction General Permit.

### Section 404, Discharge of Dredged or Fill Materials

Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material in waters of the 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 Flood Insurance Rate Maps 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 CWA 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 three years. Compliance with basin plans is primarily achieved through implementation of the NPDES, which regulates waste discharges as discussed above.

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "waters of the State," file a report of waste discharge. Absent a potential effect on the quality of "waters of the State," no notification is required. However, the RWQCB encourages implementation of BMPs similar to those required for NPDES storm water permits to protect the water quality objectives and beneficial uses of local surface waters as provided in the Lahontan Region Water Quality Control Plan (Basin Plan) (RWQCB 2015).

## 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 Section 1602 (California Fish and Game Code)

Section 1602 of the California Fish and Game Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the California Department of Fish and Wildlife (CDFW) in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, and requires any person, state or local governmental agency, or public utility to notify 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 proposed 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 proposed 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

## Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for hydrology and water resources applicable to the proposed project are provided below. Policies, goals, and implementation measures in the General Plan that are not specific to development are not listed below. However, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

### *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 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.

## 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 Grading Ordinance (17.28)

**Chapter 17.28 Kern County Grading Code.** Requirements of the Kern County Grading Code will be implemented. A grading permit will be obtained prior to commencement of construction activities. Of particular note with respect to hydrology and water quality is Section 17.28.140, Erosion Control, which addresses the following:

- **Slopes.** The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.
- **Other Devices.** Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.
- **Temporary Devices.** Temporary drainage and erosion control shall be provided as needed at the end of each workday during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

## Kern County – Applicability of NPDES Program for a Project Disturbing 1 Acre or Greater

As closed systems that never contact the ocean or other waters of the U.S., many of the waters within Kern County are technically not subject to protective regulations under the federal NPDES Program. The Kern County Public Works Department requires the completion of an NPDES applicability form for projects

with construction activities disturbing 1 or more acres, and requires the project proponent to provide information about construction activities and to identify whether storm water runoff has the potential of discharging into waters of the United States, waters of the state, or a terminal drainage facility. The purpose of the form is to identify which water quality protection measure requirements apply to different projects (if any). Should storm water runoff be contained on site and not discharge into any waters, no special actions are required. Should storm water runoff discharge into waters of the United States, compliance with the SWRCB Construction General Permit SWPPP requirements is required. Should storm water runoff not be contained on site and drains to waters of the state or a terminal drainage facility, the project proponent would be required to develop a SWPPP and BMPs.

## Water Rights Adjudication

A groundwater rights adjudication process has been underway for over 15 years to manage the basin through the Antelope Valley Integrated Regional Water Management Plan, which includes the project site. The parties to the adjudication include non-governmental overlying users, appropriative users, non-user overlying landowners and federally reserved water rights. The case defines who controls and uses the water in the basin.

In May 2011, the Santa Clara Superior Court issued an official decision determining that the adjudication area is in a state of overdraft and establishing a safe yield for the basin of 110,000 acre-feet per year (AFY), although pumping in the area has ranged up to 150,000 AFY.

On December 23, 2015, Judge Komar issued a final judgment which set in motion court-directed procedures for on the Directors of the Antelope Valley-East Kern Water Agency (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 the watermaster board be made up of five members, including a representative from AVEK; the Los Angeles County Waterworks District 40; one public water supplier selected by District 40, Palmdale Water District (PWD), Quartz Hill Water District (QHWD), Littlerock Creek Irrigation District (LCID), California Water Service Company (Cal Water), Desert Lake Community Services District (DLCSD), North Edwards Water District (NEWD), City of Palmdale, City of Lancaster, Palm Ranch Irrigation District (PRID), and Rosamond Community Services District (RCSD); and two landowner representatives. The watermaster board was also tasked with arriving at a unanimous decision on a watermaster engineer. Todd Groundwater was selected as the watermaster engineer in April 2017 and will assign pumping allocations per user that will be metered and monitored on an annual basis. Although not anticipated due to the minor amount of water required for the proposed project, should project water demands exceed the assigned allocation, the proposed project would not be denied access to groundwater, but may be required to pay a replenishment fee for pumpage in excess of the user's allocation.

# 4.10.4 Impacts and Mitigation Measures

## Methodology

This section analyzes impacts on hydrology and water quality from the implementation of the proposed project based on changes to the environmental setting as described above, identified drainage conditions in

the project site, and the current regulatory framework. Impacts were evaluated based on a review of available data and information, which is summarized above, and consideration of changes that would occur as a result of project implementation, in comparison to existing conditions. Technical studies that were prepared for the proposed project including the CEQA-Level Geotechnical Desktop Study (Appendix G, Barr 2017); the Preliminary Drainage Report (Appendix I-1; Aztec 2016a); the Water Demand Memorandum, (Appendix I-2, Aztec 2016b); and a Water Supply Assessment (Appendix I-3, AECOM 2019) were also used to compare existing conditions with proposed changes associated with the proposed project to evaluate potential impacts.

# Thresholds of Significance

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

A project could have a have a significant adverse effect on hydrology and water quality if the project would:

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    i. Result in substantial erosion or siltation on site or off site;
    ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off site;
    iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
    iv. Impede or redirect flood flows;
d. Result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation;
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan;

# Project Impacts

### Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.

#### *Construction*

The project site is relatively flat open space where runoff occurs as sheetflow. Project construction would include the following construction activities: grading for access roads; stationary ground-mounted photovoltaic (PV) module foundations; inverters and transformers; an onsite collector substation, underground and overhead fiber optics, and underground electrical collection systems. Construction would

also require areas for material laydown and equipment staging. Conventional grading would be performed 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 maintenance excavation would also be required for the proposed foundations. These activities would affect current drainage patterns and erosion on the project site. Careful design of access road gradients and other project features, such as the inverter pads, would prevent substantial alterations to drainage patterns and erosion within the project site. The amount of 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 project site and spread out across the approximately 383-acre project area.

Potential impacts on water quality from erosion and sedimentation are expected to be localized and temporary during construction. The Kern County Public Works Department requires the completion of an NPDES applicability form for projects with construction activities that would disturb 1 or more acres within Kern County. Because stormwater runoff does not discharge to waters of the United States (i.e., the project area drains to a terminal basin that is not hydrologically connected to a navigable waterway), acquisition of coverage under the General Construction NPDES permit for stormwater is not required. However, because the proposed project would disturb more than 1 acre of land area and stormwater would not be contained on site or discharge into a terminal drainage facility, the County would require the project proponent to prepare and implement a SWPPP for the proposed project. Per Mitigation Measure MM 4.7-4 in Section 4,7, *Geology and Soils*, the SWPPP would include BMPs to be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby drainages and would be applicable to all areas of the proposed project, including the solar fields and the gen-tie line. Specific BMPs for the construction phase would be identified during completion and County review of the SWPPP. Typical BMPs to be implemented would include the following:

a. Stockpiling and disposing of demolition debris, concrete, and soil properly;
b. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas;
c. Implementing erosion controls;
d. Properly managing construction materials;
e. Proper protections for fueling and maintenance of equipment and vehicles; and
f. Managing waste, aggressively controlling litter, and implementing sediment controls.

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 Ordinance.

During project construction, any activity that results in the accidental release of hazardous or potentially hazardous materials could result in water quality degradation. Materials that could contribute to this impact include diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, cement slurry, and other fluids used by construction 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/EA, Mitigation Measure MM 4.9-1 would require the project proponent to provide a Hazardous Materials Business Plan (HMBP) 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. The project proponent would provide the HMBP to all contractors working on the proposed project and would ensure that one copy is always available at the project site. Implementation of the HMBP would ensure that all hazardous materials are handled, stored, and disposed of in a manner that is protective of water quality in stormwater runoff such that potential impacts during construction would be less than significant.

### *Operation*

The solar facilities would require limited use of certain hazardous materials for routine daily operations and maintenance. Accidental release of such materials could include fuels, paints, coatings, lubricants, and transformer oil, which would result in water quality degradation if the materials were to become entrained in stormwater. This would result in a potentially significant impact on water quality. However, implementation of Mitigation Measure MM 4.9-1 in Section 4.9 (*Hazards and Hazardous Materials*), would require the project proponent to prepare and implement a Hazardous Materials Business Plan, which would minimize this impact by ensuring safe handling of hazardous materials on site and providing for cleanup in the event of an accidental hazardous material release.

In addition to accidental releases of potential hazardous materials during project operations, water quality could also be degraded as a result of increases in pollutants washed from impervious surfaces on the project site. Briefly, during dry periods, impervious surfaces (i.e., hardscape surfaces such as proposed collector substation, inverters and other hardscape like the gravel roads which because of compaction are effectively impervious) can collect greases, oils, and other vehicle-related pollutants. During storm events, these pollutants can become entrained in surface waters, resulting in water quality degradation. However, per Mitigation Measure MM 4.10-1, 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. Examples of routine structural BMPs include silt fences along the site boundary, filtration, drainage swales, runoff-minimizing landscape for common areas, and retention basins. The preliminary drainage plan has designed retention basins for each of the seven drainage areas that have been identified on the site (Aztec 2016a). Adherence to these requirements would minimize potential for the operation period to cause any significant water quality degradation. Apart from infrequent cleaning of panels with water, which is unlikely to result in runoff, no other discharges would occur when the proposed project is operational. Therefore, with the implementation of Mitigation Measure MM 4.9-1, the proposed project would not violate water quality standards or waste discharge requirements, or otherwise degrade water quality in surface water or groundwater, and the impact would be less than significant.

### *Mitigation Measure*

Implementation of Mitigation Measures MM 4.7-4 and MM 4.9-1 would be required.

**MM 4.10-1:** Prior to the issuance of a grading permit, the project proponent shall complete a final drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study and plan shall include the following:

1. A numerical stormwater model for the project site that evaluates existing and proposed (with project) drainage conditions during storm events ranging up to the 100-year event.
2. An assessment of the potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation.
3. Engineering recommendations to be incorporated into the project and applied within the site boundary. Engineering recommendations will include measures to offset increases in stormwater runoff that would result from the project, as well as implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding on-site or off-site.
5. The 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 and Bureau of Land Management (BLM) prior to the issuance of grading permits.

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-7, MM 4.9-1, and MM 4.10-1, impacts would be less than significant.

### Impact 4.10-2: The project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

The project area is located on mostly undeveloped land in an area that historically included ranching activities but does not currently have any water-demanding activities. Some abandoned residential units are located in the area and an existing well is just north of the project boundary but is now either idle or abandoned. The historic site water demand appears to be negligible (Aztec 2016b).

Records indicate that the groundwater basin underlying the project site has been in a state of overdraft for over 50 years. In 2011, Superior Court Judge Jack Komar issued an official decision that the basin is in a state of overdraft and that the safe yield of this basin is 110,000 AFY. This amount accounts for imported water that is used to recharge the basin in addition to natural recharge from infiltration of precipitation and snowmelt. The judgment requires the watermaster engineer (currently Todd Engineers) to monitor components of the total safe yield in the basin and to present those data sets to the court in an annual report (Todd Groundwater 2017). Although the basin as a whole is still in an overdraft condition, the project site is located in the western portion of the basin in the Willow Springs subbasin, where groundwater levels are rising. Consequently, the amount of groundwater in storage was calculated to have increased by 3,235 acre-feet (AF) from 2016 to 2017 (Todd Groundwater 2017).

The proposed project would require an estimated 200 AF of water during construction for dust suppression, concrete manufacturing, truck wheel washing, equipment washing, and fire safety. Water required during construction would most likely be supplied from an existing offsite well on the California Portland Cement Company property (Cal Portland Well) located approximately 0.44 miles southeast of the project site (AECOM 2019). Other water sources may include water delivery by tanker truck or development of wells on one or more wells within 6 to 7 miles of the project site (Aztec 2016b and AECOM 2019).

Due to existing overdraft conditions within the Antelope Valley groundwater basin, any use of onsite groundwater would potentially contribute to existing overdraft conditions. However, groundwater levels in the Willow Springs subbasin, where the project is located, are understood to be rising, indicating that localized overdraft is recovering. As noted above, from 2016 to 2017 alone, groundwater storage increased by 3,235 AF, which would more than accommodate the construction needs of the proposed project without adversely affecting water levels. In addition, construction water requirements would be temporary, lasting approximately 8 months, after which time project water usage would drop substantially to 5 AFY. The total projected water demand for the proposed project over 25 years is 315 AF (AECOM 2019).

The project's operational water requirements, primarily for washing of the modules once a year, would be relatively small, and as land use in the basin continues to be converted from higher water-intensive uses such as agricultural to less-demanding water uses such as renewable energy projects, water in storage appears to be recovering. The project's demands would represent a small portion of the established safe yield of the basin (110,000 AFY) and would not substantially deplete groundwater levels in comparison to existing conditions. It is anticipated that operational water requirements would not exceed the amount of annual pumping to be authorized in the pending adjudication judgment, and the project proponent and/or contractor would be able to pump the operational water needed for the proposed project. If the adjudication judgment does not allow for onsite pumping in the amount required during project operation, the project proponent and/or contractor would enter into an agreement with the watermaster and other groundwater rights holders to accommodate the project's annual operational water requirements. As noted, the use of water associated with the proposed project would be in compliance with any applicable adjudication judgment. Water supply management strategies suggest that water supply availability in the Antelope Valley region would continue and reductions in groundwater pumping following the judgment resulted in reported estimated groundwater extractions in 2016 of approximately 96,005 AFY, which is within the total safe yield of 110,000 AFY set in the Judgement (AECOM 2019). While it is possible that the project's demand may require trucking water from a local purveyor to the site if a local well cannot provide sufficient quantities of water, there should still be sufficient supplies to meet the requirements of the proposed project under average-year, single-dry year, and multiple-dry year conditions over a 25-year future projection without adversely affecting the groundwater table or underlying groundwater supplies (Aztec 2016b and AECOM 2019).

For additional discussion of the effects of adjudication on the availability of water supply for the proposed project, please refer to Section 4.17, *Utilities and Service Systems,* of this EIR/EA.

The project would result in an increase in impervious surfaces on the site from the equipment foundations, substation, and compacted gravel roads. The panels, which would cover the largest area of the site, are not considered impervious surfaces; stormwater falling on the panels would drip off and infiltrate into the ground below or run off during larger storm events into constructed drainage basins. Therefore, the proposed project would leave large areas of pervious surfaces that would absorb stormwater runoff and would not result in a significant reduction of groundwater infiltration rates associated with precipitation.

Operation of the proposed project would have a less than significant impact on groundwater supplies and groundwater recharge.

The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed project may impede sustainable groundwater management of the basin and, therefore, the impact would be less than significant.

### *Mitigation Measures*

No mitigation measures are 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 which would result in substantial erosion and/or sedimentation on-site or off-site.

The current drainage patterns at the project site are characterized as overland sheet flow that occurs from north to south. Under existing conditions, during small events, rainfall is generally quickly absorbed into sandy and silty soils on site and does not run off. During larger events, runoff occurs primarily within poorly defined drainages on site.

The project would include limited grading such that offsite flow that enters the site would continue to flow south through the site much as it does currently. However, installation of the facilities discussed in Chapter 3, *Project Description*, of this EIR/EA 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. 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 run-on 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 proposed project would generate additional stormwater runoff on site. This could exacerbate potential erosion and sedimentation on site or downstream.

According to the preliminary drainage study completed for the site, a poorly defined channel within the western portion of the site that loses definition completely as it crosses the site. The proposed project would require design and implementation of retention basins for each of the seven sub-drainage areas to capture high storm flows. These impacts are considered potentially significant, and implementation of Mitigation Measure MM 4.10-1 would be required. Mitigation Measure MM 4.10-1 would require preparation of a final drainage plan designed to 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 and minimize erosion or sedimentation to less than significant levels.

The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner

which would result in substantial erosion and/or sedimentation on-site or off-site. However, Mitigation Measure MM 4.10-1 would reduce erosion or sedimentation impacts 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 reduced to less than significant.

### Impact 4.10-4: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff which would result in flooding on- or off site.

As discussed above in Impact 4.10-3, installation of the proposed project facilities would alter existing onsite drainage patterns and flowpaths compared to existing conditions and include the introduction of new impervious surfaces. These changes 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. Changes in drainage patterns on site that relate to the installation of new facilities, especially changes that result in flow concentration, could increase the occurrence of localized flooding on site or downstream. Finally, proposed new impervious surfaces would generate additional stormwater runoff on site. This could exacerbate potential increases in localized flooding on site or downstream.

However, as described above, a preliminary drainage study has been completed for the project site, which included calculations, in accordance with Kern County requirements, of estimated runoff volumes associated with the 10-year, 24-hour storm event (Aztec 2016a). The findings of the study were used to size each retention basin in accordance with Kern County requirements. With implementation of Mitigation Measure MM 4.10-1, final design of proposed stormwater management facilities including the retention basins would be required. The final design would determine the appropriate sizing and location of the retention basins to ensure that flooding on- or off site is reduced to less than significant levels.

The project would not substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff and would result in flooding on- or off site. With implementation of Mitigation Measure MM 4.10-1, the impacts would be less than significant for the proposed project.

### *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 reduced to less than significant.

### Impact 4.10-5: The project would create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

The project site is located in a remote, rural region with no existing or planned stormwater infrastructure. As described above, the proposed project would be required to adhere to Kern County Public Works Department stormwater 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. When the proposed project is operational, potential changes to onsite drainage patterns, including installation of new impervious surfaces, could result in changes to the amount or location of stormwater flows emanating from most of the project site. However, the proposed 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.

The project would not substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff and would result in flooding on- or off site. Implementation of Mitigation Measure MM 4.10-1 would reduce impacts to less-than-significant levels for the proposed project.

#### *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 reduced to less than significant.

### Impact 4.10-6: The project would contribute to inundation by a flood hazard, tsunami, or seiche zones, that would result in risk of release of pollutants.

As discussed more thoroughly in Section 4.9, *Hazards and Hazardous Materials*, the proposed project would not include the use, storage, or disposal of significant quantities of hazardous materials. 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, based on the characteristics of the proposed project and the location, the project would have a less than significant potential to release pollutants from flooding, tsunamis, or seiche waves.

#### *Mitigation Measures*

No mitigation measures are required.

## Level of Significance after Mitigation

Impacts would be less than significant.

**Impact 4.10-7: 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 Lahonton 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 proposed project would include required BMPs and drainage control requirements that would be consistent with the Basin Plan. The Sustainable Groundwater Management Act of 2014 was enacted to further groundwater management in basins that are most threatened by overuse by prioritizing basins, establish sustainability plan requirements, form local groundwater management agencies, and create timelines for management plans (AECOM 2019). The proposed project is not subject to a sustainable groundwater management plan as it is within an adjudicated basin and, therefore, is not under a specific Groundwater Sustainability Plan (GSP) area. Although the proposed project is not within a GSP required area, the project site is within the Antelope Valley Groundwater Basin, which under its existing adjudication, would be managed by a court appointed watermaster, as described below.

As previously discussed, the project site is located within the Antelope Valley Groundwater Basin, most of which is in an adjudicated area for groundwater management. The adjudication provides a framework to sustainably manage the basin and reduce groundwater level declines and subsidence. To administer the judgment, the court directed appointment of the watermaster (a five-member board). In 2016, the watermaster board and an advisory committee (both entities required under the judgment) were formed. The board hired Todd Groundwater as watermaster engineer (required by the judgment) at the end of April 2017 to provide hydrogeological and technical analyses and to guide administrative functions to fulfill the judgment. Under the judgment, the watermaster engineer has the responsibility of preparing annual reports to the court. The project would require water for construction and operation phases that would be obtained from a nearby well or trucked onto the site from a local purveyor that would be subject to the requirements of the adjudicated basin management. Therefore, the proposed project would not conflict with or obstruct implementation of water quality control plans or sustainable groundwater management of the area, and the potential impacts would be less than significant.

### *Mitigation Measures*

No mitigation measures are required.

## Level of Significance

Impacts would be less than significant.

# Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope considered for the cumulative analysis is the Antelope Valley HU for surface water and the Antelope Valley Groundwater Basin for groundwater. As described in Chapter 3, *Project Description*, of this EIR/EA, multiple projects, including several utility-scale solar and wind energy production facilities, are proposed throughout the Western Antelope Valley in both Kern and Los Angeles Counties. The Antelope Valley HU is a closed basin with no outlets to the ocean. The Antelope Valley is a recognized groundwater basin and use of the basin as the geographic scope allows for analysis of impacts to the local groundwater supply. The projects listed in Table 3-5, *Cumulative Projects List*, all reside in a

somewhat smaller geographic scope than the Antelope Valley HU, but this smaller area is likely experiencing development, particularly development of renewable energy, of a type and density that is representative of the hydrological unit as a whole. As shown in Table 3-5, in the project vicinity 9 solar energy projects are proposed in Kern County.

With regard to water supply, the cumulative scenario projects, including solar energy projects, would require water for construction and operation. The Santa Clara Superior Court has established a safe threshold for water extraction from the Antelope Valley Groundwater Basin to be 110,000 acre-feet per year. As noted above for the proposed project, related projects in the Antelope Valley Groundwater Basin would also be required to adhere to the adjudication judgement. Water suppliers that are providing water supply to the related projects are parties subject to the requirements of the adjudication basin management overseen by the watermaster. Therefore, the incremental water use of the proposed project, along with the other similar cumulative projects that are being managed by the watermaster, during construction and operations would not result in a significant cumulative impact to the basin. Hence, cumulative impacts related to water supplies are less than significant.

As discussed above, the solar projects would be required to implement a SWPPP and associated BMPs to minimize the potential for the release of pollutants and sediment into surface water. Other cumulative scenario projects would be required to implement similar measures as a part of the CEQA and permitting review process. Therefore, cumulative scenario impacts associated with water quality degradation would not be cumulatively considerable, and the proposed project would not contribute to a cumulative impact on water quality.

With respect to erosion, drainage, and flooding, the proposed 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 proposed project would not contribute to a cumulative impact on flooding, erosion, or drainage.

### *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, cumulative impacts would be less than significant.

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Section 4.11
# Land Use and Planning

## 4.11.1 Introduction

This section of the EIR/EA addresses potential land use impacts that would result from the proposed project. The following discussions address existing environmental conditions in the affected environment, evaluates the project's consistency with applicable goals and policies, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from project construction and operation. The information in this section is based primarily on a review of the project's consistency with the Kern County General Plan and the Kern County Zoning Ordinance.

## 4.11.2 Environmental Setting

### Onsite Land Uses

The proposed Camino Solar project is located in the southern portion of Kern County on undeveloped rangeland. The project site is located within the boundaries of the Kern County General Plan and is subject to the provisions of the Kern County Zoning Ordinance. The proposed project is also located within the Desert Renewable Energy Conservation Plan (DRECP). The project site is not located within the boundaries of an Airport Influence Area as identified in the Kern County Airport Land Use Compatibility Plan (ALUCP). There are no residences or other structures on the project site.

As shown in **Table 4.11-1**, *Project Site and Surrounding Land Use Designations and Zoning Classifications*, below, and **Figure 3-4**, *Existing Kern County General Plan Designations*, in Chapter 3, *Project Description*, of this EIR/EA, the project site has a General Plan designation of 1.1 (State or Federal Land); 8.3 (Extensive Agriculture, 20-acres minimum); 8.5 (Resource Management, 20-acres minimum); and 8.3/2.1 (Extensive Agriculture/Seismic Hazard, 20-acres minimum/Seismic Hazard Combining Area. According to the Kern County General Plan, the 1.1 (State or Federal Land) land use designation applies to all property under the ownership and control of the various State and federal agencies operation in Kern County (including, but not limited to, military, U.S. Forest Service, Bureau of Land Management, and Department of Energy). The 8.3 land use designation applies to agricultural uses involving large amounts of land with relatively low value per acre yields. Typical uses include livestock grazing, farming and woodlands. The minimum allowable parcel size in the 8.3 category 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-acres gross. The 8.5 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 category 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-acres gross. The 2.1 land use designation applies to Alquist-Priolo Special Study Zones and other recently active fault zones.

**TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USES GENERAL PLAN AND ZONING DESIGNATIONS**

| | Land Use | General Plan Map Code | Zoning |
|---|---|---|---|
| **Project Site** | Undeveloped and Manzana Project Wind Turbines | 1.1 (State or Federal Land); 8.3 (Extensive Agriculture); 8.5 (Resource Management); and 8.3/2.1 (Extensive Agriculture/Seismic Hazard) | A WE (Exclusive Agriculture, Wind Energy); A GH (Exclusive Agriculture, Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); A (Exclusive Agriculture); and OS (Open Space) |
| **North** | Undeveloped and Manzana Project Wind Turbines | 1.1 (State or Federal Land); 8.3 (Extensive Agriculture) | A (Exclusive Agriculture); A WE (Exclusive Agriculture, Wind Energy) |
| **South** | Undeveloped, Scattered Residential, and Manzana Project Wind Turbines | 8.3 (Extensive Agriculture); 8.5 (Resource Management); and 2.1 (Seismic Hazard) | A (Exclusive Agriculture); A WE (Exclusive Agriculture, Wind Energy); A GH (Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); PL RS GH (Platted Lands, Residential Suburban, Geologic Hazard) and PL RS (Platted Lands, Residential Suburban) |
| **East** | Undeveloped and Manzana Project Wind Turbines | 8.3 (Extensive Agriculture); and 8.5 (Resource Management) | A (Exclusive Agriculture); A WE (Exclusive Agriculture, Wind Energy); and PL RS MH (Platted Lands, Residential Suburban, Mobilehome); PL RS (Platted Lands, Residential Suburban); and OS (Open Space). |
| **West** | Undeveloped, Scattered Residential and Manzana Project Wind Turbines | 8.3 (Extensive Agriculture); and 2.1 (Seismic Hazard) | A (Exclusive Agriculture); A GH (Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); and A WE (Exclusive Agriculture, Wind Energy) |

As shown in **Table 4.11-1,** *Project Site and Surrounding Land Use Designations and Zoning Classifications*, below, and **Figure 3-5,** *Existing Kern County Zoning Classifications*, in Chapter 3, Project Description, of this EIR/EA, the project site is located within the A (Exclusive Agriculture); A WE (Exclusive Agriculture, Wind Energy); A GH (Exclusive Agriculture, Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); and OS (Open Space) Zone Districts.

According to the Kern County Zoning Ordinance, the purpose of the Exclusive Agriculture (A) District is to designate areas suitable for agricultures uses and to prevent the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to nonagricultural uses. Uses in the A District

are limited primarily to agricultural uses and other activities compatible with agricultural uses. The A District permits solar energy electrical generators subject to the approval of a conditional use permit.

The Wind Energy (WE) District is a combining district and may only be applied to the following district classifications: Exclusive Agriculture (A), Industrial (M-1, M-2, and M-3), Natural Resource (NR) with a minimum lot size of twenty (20) acres, Recreation-Forestry (RF) with a minimum lot size of twenty (20) acres, Limited Agriculture (A-1) with a minimum lot size of twenty (20) acres, or Estate (E) with a minimum lot size of twenty (20) acres. The uses allowed and the regulations required in the WE District would be in addition to the regulations of the base district with which the WE District is combined. Permitted uses in the WE District include accessory administrative and maintenance structures and facilities, electrical substations, transmission lines, and other facilities and electrical structures accessory and incidental to the main use, in addition to uses permitted by the base district with which the WE District is combined.

The Geologic Hazard (GH) District is a combining district and may only be applied to lands designated Map Codes 2.1, 2.2, or 2.3 by the County General Plan and to any other area where there is a reasonable presumption based on documented evidence that a hazardous or potentially hazardous condition exists. The regulations established by the GH District would be in addition to the regulations of the base district with which the GH District is combined. Permitted uses in the GH district include those uses permitted by the base district with which the GH District is combined, except as modified in accordance with the standards and procedures.

The purpose of the Open Space (OS) District is to designate lands in public or private ownership that are essentially unimproved and should remain in open space use for the preservation of identified scenic values, habitat for endangered plants or animals, unique geologic features, natural resources, passive recreational values, or for the protection of public health and safety. The OS District may also be utilized as an Interim District in conjunction with County-initiated changes in zoning district classification for those properties designated as "Commercial" or "Industrial" by the Kern County General Plan or adopted Specific Plan, where the current zoning district classification for those properties is inconsistent with said "Commercial" or "Industrial" designations. The OS District permits transmission lines and supporting towers, poles, pipelines, and underground facilities for gas, water, electricity, telephone, or telegraph service owned and operated by a public utility company under the jurisdiction of the California Public Utilities Commission.

The project site is also included within Kern County Agricultural Preserve Number 24 boundary, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture), this includes the portions of the project site that are currently zoned A WE (Exclusive Agriculture and Wind Energy combining); and as A GH WE (Exclusive Agriculture, Geologic Hazard combining, and Wind Energy combining). No lands within the project site are subject to a Williamson Act Land Use contract.

## Surrounding Land Uses

As described in **Table 4.11-1,** *Project Site and Surrounding Land Use Designations and Zoning Classifications*, above, surrounding land uses are composed primarily of undeveloped land and the Manzana Project wind turbines. Scattered residential structures are located along Rosamond Boulevard, approximately 5.25 miles southeast of the project site, and along 140th Street, approximately 4.75 miles southeast of the project site. The nearest populated areas are the unincorporated community of Mojave 17 miles to the northeast, the unincorporated community of Rosamond 16 miles to the southeast, and the City

of Tehachapi 12 miles to the north. The Rosamond Airport and Airpark are located approximately 14 miles southeast of the project site.

As with the proposed project, surrounding land uses are designated 1.1 (State or Federal Land); 8.3 (Extensive Agriculture); 8.5 (Resource Management); and 2.1 (Seismic Hazard). Surrounding land uses are located within the OS (Open Space); A WE (Exclusive Agriculture, Wind Energy); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); A (Exclusive Agriculture) Zone Districts; PL RS (Platted Lands, Residential Suburban Combining); and PL RS MH (Platted Lands, Residential Suburban, Mobilehome Combining) Zone Districts.

# 4.11.3 Regulatory Setting

## Federal

There are no applicable federal regulations for this issue area relevant to CEQA.

## State

### The California State Lands Commission

In 1853, the United States congress granted to the State of California nearly 5.5 million acres of land for the specific purpose of supporting public schools. The Commission manages approximately 468,000 acres of school lands still held in fee ownership by the State and the reserved mineral interests on an additional approximately 790,000 acres where the surface estates have been sold. Revenue from School lands is deposited in the State Treasury for the benefit of the Teachers' Retirement Fund (Pub. Resources Code, Section 6217.5). In 1984, the State legislature passed the School Land Bank Act (Act), which established the school. The Act directed the Commission to develop school lands into a permanent and productive resource base for revenue generating purposes. In addition, Sections 6501-6509 of the Public Resources Code govern how the Commission administers this property including leasing, mining, mineral rights, and sales. In particular, Section 6501.1 states that the Commission may lease lands for commercial, industrial, and recreational purposes.

### The Desert Renewable Energy Conservation Plan (DRECP)

The DRECP is a comprehensive plan that provides for renewable energy and transmission development projects and for the conservation of sensitive species and ecosystems in California's Mojave and Colorado/Sonoran deserts. It was prepared by the California Energy Commission (CEC), the California Department of Fish and Wildlife (CDFW), the Bureau of Land Management (BLM), and the U.S. Fish and Wildlife Services in September 2014. The Commission manages approximately 340,533 acres of school lands, or 1.5 percent of the total Plan Area, in which the project site is included.

Phase I of the DRECP was approved in September of 2016; as part of Phase I, the BLM has prepared a Record of Decision (ROD) approving its Land Use Plan Amendment (LUPA) to the California Desert Conservation Area (CDCA) Plan, and Bishop and Bakersfield Resources Management Plans (RMPs). The LUPA represents the public-lands component of the DRECP, identifying areas appropriate for renewable

energy development, as well as areas important for biological, environmental, cultural, recreation, social, and scenic conservation, consistent with the Federal Land Policy and Management Act multiple use and sustained yield requirements. The amendments have been designed to result in an efficient and effective biological conservation and mitigation program providing renewable energy project developers with permit streamlining and cost containment while at the same time conserving restoring, and enhancing natural communities and related ecosystems.

The CEC, CDFW, and the Commission identified three primary objectives the State must meet to achieve the fundamental purpose of the DRECP:

> Objective 1: Reduce the biological and other environmental impacts of future utility-scale renewable energy developments in the Plan Area by designating appropriate areas for renewable energy development within the context of a landscape-scale conservation plan that are sufficient to accommodate the foreseeable demand for renewable energy in the DRECP through 2040.
>
> Objective 2: Contribute to California's Renewables Portfolio Standard and the state's greenhouse gas reduction mandates and goals by planning for approximately 20,000 MWs of renewable energy generation and associated transmission capacity in the Plan Area by 2040, including obtaining state and federal incidental take authorizations with regulatory assurances needed for covered renewable energy and transmission projects.
>
> Objective 3: Provide for the long-term conservation and management of Covered Species within the Plan Area and preserve, restore, and enhance natural communities and ecosystems in which those species are found by focusing renewable energy development away from areas of greatest biological importance or sensitivity; coordinating and standardizing biological avoidance, minimization, mitigation, compensation, conservation, and management requirements for Covered Activities within the Plan Area; and taking other actions to meet conservation planning requirements in state and federal law.

## West Mojave Plan Habitat Conservation Plan

The West Mojave Plan Habitat Conservation Plan (WMPCP) is a comprehensive environmental analysis of seven alternatives that address compliance with the federal and California endangered species acts (FESA and CESA, respectively). The primary purpose of the Plan is to develop management strategies for the desert tortoise, Mohave ground squirrel and over 100 other sensitive plants and animals that would conserve those species throughout the western Mojave Desert, while simultaneously establishing a streamlined program for compliance with the regulatory requirements of FESA and CESA. The 9,359,070-acre planning area is located to the north of the Los Angeles metropolitan area, including 3,263,874 acres of BLM-administered lands, 3,029,230 acres of private lands and 102,168 acres of lands administered by the State of California. The Plan establishes goals and standards for the conservation of sensitive species and streamlining Endangered Species Act Permitting (BLM, 2005a).

## 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. 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 (KCGP) 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.

According to the (KCGP) Eastern Section Map, the project site is located within Map Codes 1.1 (State or Federal Land), 8.3 (Extensive Agriculture, 20-acres minimum), 8.5 (Resource Management, 20-acres minimum), and 8.3/2.1 (Extensive Agriculture/Seismic Hazard, 20-acres minimum/Seismic Hazard Combining Area). Each Map Code/overlay area contains specific goals, policies, and implementation measures to guide development within them. However, the Map Code 1.1 for the proposed project are State lands are not within the jurisdiction of the KCGP.

In addition to the Land Use, Open Space, and Conservation Element, the KCGP includes other elements related to circulation, noise, energy, and the Kern River Plan. Each element establishes goals, policies, and implementation measures that guide planning decisions in unincorporated Kern County. The goals, policies, and implementation measures relevant to the proposed project are listed below.

## *1. Land Use, Open Space, and Conservation Element*

### 1.3 Physical and Environmental Constraints

#### *Goal*

Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.

#### *Policies*

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained ((Map Code 2.1 (Seismic Hazard), Map Code 2.2 (Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

Policy 2: To minimize the risk to Kern County Residents and their property, new development will not be permitted in hazard areas in the absence of implementing ordinances and programs. These ordinances will establish conditions, criteria and standards for the approval of development in hazard areas.

Policy 3: Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.

***Implementation Measures***

Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control

## 1.4 Public Facilities and Services

***Goals***

Goal 1: Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.

Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.

***Policies***

Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

Policy 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 C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

## 1.9 Resource

***Goals***

Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.

Goal 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 4: Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.

Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

***Policies***

Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.

Policy 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 14: Emphasize conservation and development of identified mineral deposits.

Policy 16: The County will encourage development of alternative energy sources by tailoring its Zoning and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines published by the California State Energy Commission.

Policy 19: Work with other agencies to define regulatory responsibility concerning energy-related issues.

***Implementation Measures***

Measure C: The Kern County Planning and Natural Resources Department will seek review and comment from the County Engineering and Survey Services Department on the implementation of the National Pollutant Discharge Elimination System for all discretionary projects.

Measure H: Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.

Measure I: Periodically review the zoning ordinance to reflect new technology and energy sources, and encourage these types of uses for new development.

Measure K: Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction).

## 1.10 General Provisions

### *Goal*

Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

## 1.10.1 Public Services and Facilities

## Goals

Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

### *Policies*

Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

### *Implementation Measures*

Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

Measure D: Involve utility providers in the land use and zoning review process.

Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

### 1.10.2 Air Quality

***Policies***

Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.

Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:

(1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and

(2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.

Policy 21: The County shall support air districts efforts to reduce PM10 and PM2.5 emissions.

***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 outlaying areas.

j. Other strategies that may be recommended by the local Air Pollution Control Districts.

Measure J: The County should include PM10 control measures as conditions of approval for subdivision maps, site plans, and grading permits.

### 1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

***Policy***

Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

***Implementation Measures***

Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

### 1.10.5 Threatened and Endangered Species

***Policies***

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.

Policy 28: County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.

Policy 29: The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

Policy 31: Under the provisions of the California Environmental Quality Act, the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document is prepared.

Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

#### *Implementation Measures*

Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.

Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.

## *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

Goals

Goal 5: Maintain a minimum Level of Service (LOS) D.

#### *Policies*

Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section lines. This is because the road center line can be determined by an existing survey.

Policy 3: This plan's road-width standard are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.

Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;

Arterial [Major Highway] Minimum 110-foot right-of-way;

Collector [Secondary Highway] Minimum 90-foot right-of-way;

Commercial-Industrial Street Minimum 60-foot right-of-way; and

Local Street [Select Local Road] Minimum 60-foot right-of-way.

***Implementation Measure***

Measure A: The Planning Department shall carry out the road network Policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. 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.

## *Chapter 3. Noise Element*

### 3.3 Sensitive Noise Areas

#### *Goals*

Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.

Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

#### *Policies*

Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.

Policy 2: Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health (DOSH).

Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise

Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.

Policy 7: Employ the best available methods of noise control.

#### *Implementation Measures*

Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.

Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.

Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB $L_{dn}$ and interior noise levels in excess of 45 dB $L_{dn}$.

Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:

a) Be the responsibility of the applicant.

b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.

c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.

Measure I: Noise analyses shall include recommended mitigation, if required, and shall:

a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10 – 20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.

c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.

d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

## *Chapter 4. Safety Element*

### 4.1 Introduction

#### *Goal*

Goal 1: Minimize injuries and loss of life and reduce property damage.

### 4.2 General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint

#### *Implementation Measures*

Measure 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.

### 4.6 Wildland and Urban Fire

#### *Policies*

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

#### *Implementation Measures*

Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

### 4.9 Hazardous Materials

#### *Implementation Measure*

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

## *Chapter 5. Energy Element*

### 5.2 Importance of Energy to Kern County

#### *Policies*

Policy 7: The processing of all discretionary energy project proposals shall comply with the State CEQA *Guidelines* directing that the environmental effects of a project must be taken into account as part of project consideration.

Policy 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.

Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

### 5.4 Electricity Resources and Generation

### 5.4.5 Solar Energy Development

#### *Goal*

Goal 1: Encourage safe and orderly commercial solar development.

***Policies***

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Policy 4: The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species.

Policy 7: The processing of all discretionary energy project proposals shall comply with the State CEQA *Guidelines* directing that the environmental effects of a project must be taken into account as part of project consideration.

Policy 8: The County should work closely with local, State, and Federal agencies to ensure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts on fish, wildlife, and botanical resources, wherever practical.

Policy 10: The County should require acoustical analysis for energy project proposals that might affect sensitive and highly sensitive uses in accordance with the Noise Element of the general plan.

***Implementation Measure***

Measure B: The County should work with affected State and federal agencies and interest groups to establish consistent policies for solar energy development.

### 5.4.7 Transmission Lines

***Goal***

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

***Policies***

Policy 1: The County should encourage the development and upgrading of transmission lines and associated facilities (e.g., substations) as needed to serve Kern County's residents and access the County's generating resources, insofar as transmission lines do not create significant environmental or public health and safety hazards.

Policy 2: The County shall review all proposed transmission lines and their alignments for conformity with the Land Use, Conservation, and Open Space Element of this General Plan.

Policy 3: In reviewing proposals for new transmission lines and/or capacity, the County should assert a preference for upgrade of existing lines and use of existing corridors where feasible.

Policy 4: The County should work with other agencies in establishing routes for proposed transmission lines.

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

Policy 6: The County should encourage new transmission lines to be sited/configured to avoid or minimize collisions with and electrocution hazards to raptors.

***Implementation Measures***

Measure A: The County should monitor the supply and demand of electrical transmission capacity locally and statewide.

Measure B: The County shall continue to maintain provisions in the Zoning Ordinance.

## 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.

The proposed project lies within the A (Exclusive Agriculture), WE (Wind Energy), OS (Open Space), and GH (Geological Hazard) districts, however, since 233 acres of the project site consists of State-owned property, which is in the jurisdiction of the DRECP, only 150 acres of the proposed project are subject to Kern County land use regulations. Kern County zoning districts are described below.

### *A (Exclusive Agriculture)*

The purpose of the Exclusive Agriculture (A) District is to designate areas suitable for agricultural uses and to prevent the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to nonagricultural uses. Uses in the A District are limited primarily to agricultural uses and other activities compatible with agricultural uses. Pursuant to Section 19.14.030 of the Kern County Zoning Ordinance, solar facilities are permitted on land zoned A (Exclusive Agriculture) with approval of a Conditional Use Permit (CUP).

### *OS (Open Space)*

The purpose of the Open Space (OS) District is to designate lands in public or private ownership that are essentially unimproved and should remain in open space use for the preservation of identified scenic values,

habitat for endangered plants or animals, unique geologic features, natural resources, passive recreational values, or for the protection of public health and safety. The OS District may also be utilized as an Interim District in conjunction with County-initiated changes in zoning district classification for those properties designated as "Commercial" or "Industrial" by the Kern County General Plan or adopted Specific Plan, where the current zoning district classification for those properties is inconsistent with said "Commercial" or "Industrial" designations. Pursuant to Section 19.44.030(D), resource extraction and energy development (i.e. solar facilities) are permitted on land zoned OS (Open Space) with the approval of a CUP.

### *WE (Wind Energy)*

A. It is the intent of the Board of Supervisors, in adopting this chapter, to promote the use of proven wind-driven generators for energy recovery, and to promote safeguards ensuring the maintenance of the health, safety, and welfare of the citizens of the County. In addition, in adopting this chapter, it is the intent of the Board of Supervisors to promote the use of an alternative to fossil-fuel-generated electrical power in areas of the County which are identified to have suitable wind resources for production of commercial quantities of wind-generated electrical power. Furthermore, it is the intent of the Board of Supervisors that site-specific application of this chapter shall occur only in a manner that provides a harmonious balance between the suitability of a project site with existing area land use and physical surroundings.

B. The WE District is a combining district and shall only be applied to the following district classifications: Exclusive Agriculture (A), Industrial (M-1, M-2, and M-3), Natural Resource (NR) with a minimum lot size of twenty (20) acres, Recreation-Forestry (RF) with a minimum lot size of twenty (20) acres, Limited Agriculture (A-1) with a minimum lot size of twenty (20) acres, or Estate (E) with a minimum lot size of twenty (20) acres. The uses allowed and the regulations required in the WE District shall be in addition to the regulations of the base district with which the WE District is combined. The WE District may not be adopted as a single land use designation.

### *GH (Geological Hazard)*

The purpose of the Geologic Hazard (GH) Combining District is to protect the public's health and safety and minimize property damage by designating areas that are subject to or potentially subject to surface faulting, ground shaking, ground failure, landslides, mudslides, or other geologic hazards by establishing reasonable restrictions on land use in such areas. The GH District shall be applied to lands designated Map Codes 2.1, 2.2, or 2.3 by the County General Plan and to any other area where there is a reasonable presumption based on documented evidence that a hazardous or potentially hazardous condition exists. The regulations established by the GH District shall be in addition to the regulations of the base district with which the GH District is combined. Uses permitted with a conditional use permit in a GH District are those conditional uses permitted by the base district with which the GH District is combined, except as modified in accordance with the standards and procedures set out in Sections 19.68.130 through 19.68.150 of this chapter.

## Regional Transportation Plan

The latest Regional Transportation Plan (RTP) for Kern County identifies future transportation improvements needed to serve the projected transportation needs of the County. The RTP details the existing transportation systems; sets goals, polices and projects; and identifies funding mechanisms for these projects. Transportation projects identified in the RTP include highway, street, and roadway projects; mass transportation; railroad; and other programs and projects related to the transportation needs of the

County. It 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, 2018a).

## 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

For the purposes of this analysis, relevant documents, particularly the Kern County General Plan and the Kern County Zoning Ordinance, were consulted. The project was qualitatively assessed to determine whether it would conflict with any applicable land use plan, policy, or regulations, including habitat conservation plans. If the proposed project was determined to conflict with a relevant plan, a determination was then made as to whether the conflict or inconsistency would result in a significant physical environmental impact that would otherwise be mitigated or avoided without implementation of the proposed project.

The potential impacts associated with the proposed 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 proposed project. The evaluation of the proposed project impacts is based on professional judgement, analysis of the County's land use policies and the significance criteria established in Appendix G of the CEQA *Guidelines*, which the County has determined appropriate for this EIR/EA.

## 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 proposed project could potentially have a significant adverse effect on land use.

A project could have a have a significant adverse effect on land use if the project would:

a. Physically divide an established community?

b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Kern County determined in the Notice of Preparation/Initial Study (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/EA. Please refer to Appendix A of this EIR/EA for a copy of the NOP/IS and additional information regarding these issue areas:

a. Physically divide an existing community?

As detailed in the NOP/IS, the proposed project would be constructed on undeveloped desert lands used primarily for wind energy generation and as grazing land. There are no residences or other structures on the project site. The nearest populated areas are the community of Mojave, approximately 17 miles to the northeast; the unincorporated community of Rosamond 16 miles southeast, and the City of Tehachapi, approximately 12 miles to the north. There is a small cluster of residential development to the southwest of the project site, however, the proposed project would not physically divide or restrict access to any community, as the project site is located in a generally undeveloped and unincorporated area of Kern County, with little residential development in the vicinity of the area. Therefore, impacts related to the

physical division of an established community would not occur, and no further analysis of issue was included in this EIR/EA.

# Project Impacts

### Impact 4.11-1: The project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

The Kern County General Plan and the Kern County Zoning Ordinance establish land use policies and regulations that are applicable to the proposed project. The project site is within the jurisdictional boundaries of the KCGP and the DRECP. The following discussion evaluates the proposed project's conformity to these plans, policies and regulations in the lands for which the County has jurisdiction. Discussion of DRECP policies are located in Chapter 11, *Environmental Assessment*, of the EIR/EA.

The following discussion evaluates the project's conformity to these plans, policies and regulations. Implementation of the proposed project would require approval of Conditional Use Permit (CUP) No. 7, Map 216 from the Kern County Planning Commission for construction and operation of the 44-megawatt (MW) solar electrical generation facility.

## Conditional Use Permit

The project site is zoned A (Exclusive Agriculture) and OS (Open Space). According to Kern County Zoning Ordinance 19.42,030 and 19.44.030, solar energy electrical facilities are permitted within the A and OS districts with approval of a CUP. The project operator is requesting approval of a CUP to allow for construction and operation of the solar facility within the A and OS zone districts. With this discretionary approval, the proposed project would be consistent with the A and OS zoning classifications. Therefore, 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.

The Kern County General Plan designates the project site as map code 8.1 (Resource Management) and the site is zoned A (Limited Agriculture) and OS (Open Space). However, the County acknowledges that it does not have land use jurisdiction over 233 acres of this site because it is owned and administered by the State. The project site would require a lease agreement from the BLM. Because the proposed project would not conflict with the zoning or land use plan for which the County has jurisdiction, the proposed project would be consistent with applicable land use policies and regulations.

## Project Consistency with the Kern County General Plan

As described in Section 4.11.2 and **Table 4.11-1**, above, and shown in **Figure 3-4,** *Existing Kern General Plan Designations,* in Chapter 3, *Project Description*, the project site has a General Plan designation of 1.1 (State or Federal Land); 8.3 (Extensive Agriculture, 20-acres minimum); 8.5 (Resource Management, 20-acres minimum); and 8.3/2.1 (Extensive Agriculture/Seismic Hazard, 20-acres minimum/Seismic Hazard Combining Area). **Table 4.11-2,** *Consistency Analysis with Kern County General Plan for Land Use*, presents an evaluation of the project's consistency with the Kern County General Plan. The table lists the goals and policies identified above in the regulatory setting and provides analysis on the project's general consistency with overarching policies. Additionally, the table provides goals and policies of issue areas that

are presented in more detail in other sections of the EIR/EA. As evaluated in detail in **Table 4.11-2**, the proposed project is consistent with the goals and policies of the Kern County General Plan.

## Kern County Zoning Ordinance

As described in Section 4.11.2, above, the entire project is also subject to the provisions of the Kern County Zoning Ordinance and is included within Kern County Agricultural Preserve Number 24 boundary, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture), this includes the portions of the project site that are currently zoned A WE (Exclusive Agriculture and Wind Energy combining) and as A GH WE (Exclusive Agriculture, Geologic Hazard combining, and Wind Energy combining). As shown in **Table 4.11-1,** above, and **Figure 3-5,** *Existing Zoning,* in Chapter 3, *Project Description*, the Kern County Zoning Ordinance designates portions of the project site as being within the A (Exclusive Agriculture) zone district; A WE (Exclusive Agriculture and Wind Energy combining) zone district; and A GH WE (Exclusive Agriculture, Geologic Hazard combining, and Wind Energy combining) zone district. The BLM-administered parcel is zoned as Open Space. Pursuant to Sections 19.12.020, 19.12.030, 19.64.020, 19.64.030, 19.68.020, and 19.68.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for A (Exclusive Agriculture), and Wind Energy combining (A WE), and Exclusive Agriculture, Geologic Hazard combing, Wind Energy Combining (A GH WE), and (OS) Open Space pursuant to Section 19.44.030 of Kern County Zoning Ordinance, subject to a CUP. The project proponent is requesting a CUP to allow for the construction and operation of a 44 MW solar facility within the aforementioned Zoning Districts in Map 216. 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 CUP, 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.

## Mitigation Measures

No mitigation measures are required.

## Level of Significance

Impacts would be less than significant.

# Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope of analysis for this chapter of the EIR/EA is 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 this region. As described in more detail in **Table 3-9,** *Cumulative Projects List*, in Chapter 3**,** *Project Description*, of this EIR/EA, 17 related projects are proposed within the geographic scope, including 9 solar projects. While the surrounding area is still relatively rural in nature, the proposed project, along with related projects, has the potential to contribute to a cumulative influence on proposed land uses in and around the project site.

The anticipated impacts of the proposed project in conjunction with cumulative development in the area of the project would increase the urbanization and result in the loss of open space within the desert region of the County. However, potential land use impacts require evaluation on a case-by-case basis because of the interactive effects of a specific development and its immediate environment. As described in Table 4.11-2, the proposed project would be consistent with the goals and policies of the Kern County General Plan. 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 undergo separate environmental review on a case-by-case basis in accordance with the requirements of CEQA, *Guidelines*. 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. Should potential impacts be identified, appropriate mitigation would be prescribed that would likely reduce potential impacts to less-than-significant levels.

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 proposed 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 Decommission Plan to be carried out by the project proponent once the life of the proposed project has ended, has been included to establish safeguards to ensure the maintenance of the health, safety, and welfare of the citizens of the County. While it is the intent of Kern County to promote the use of an alternative to fossil-fuel-generated electrical power in areas of the County that are identified to have suitable characteristics for production of commercial quantities of solar PV-generated electrical power, it is necessary to protect surrounding landowners from potential impacts associated with the abandonment of such facilities. With the implementation of Mitigation Measure MM 4.11-1, cumulative land use impacts would be considered less than significant.

## Mitigation Measures

**MM 4.11-1:** Prior to issuance of any building permit, the project proponent shall provide the Kern County Planning and Natural Resources Department with a Decommission Plan for review and approval. The plan would be carried out by the proponent or a County-contracted consulting firm(s) at a cost to be borne by the project proponent.

1. The Decommission Plan shall include, but not be limited to, the following:
    a. Factor in the cost to remove the solar panels and support structures, replace any disturbed soil from the removal of support structures (including all underground equipment), and control of fugitive dust on the remaining undeveloped land.

b. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations.

c. The assumption, when preparing the estimate, is that the project proponent is incapable of performing the work or has abandoned the solar facility, thereby resulting in the County hiring an independent contractor to perform the decommission work.

2. In addition to submittal of a Decommission Plan, the project proponent shall post or establish and maintain with the County financial assurances related to the deconstruction of the site as identified on the approved Decommission Plan should, at any point in time, the project proponent determine it is not in their best interest to operate the facility. The financial assurance required prior to issuance of any building permit shall be established using one of the following:

   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.

3. The financial assurances documents shall include the following verbiage, including any required verbiage through Kern County Planning and Natural Resources Department's consultation and review with Kern County Counsel:

   a. Financial institution or Surety Company shall give the County a minimum of 120 days' notice of intent to terminate the letter of credit or bond.

   b. Financial assurances shall be reviewed annually by the respective Counties or County-contracted consulting firm(s) at a cost to be borne by the project proponent to substantiate those adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommission Plan.

   c. Should the project proponent deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance.

   d. Financial institution or Surety Company shall be licensed to conduct business in the state of California.

4. Once deconstruction has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted will be adjusted or returned accordingly. Any funds not utilized through decommission of the site by the County shall be returned to the project proponent.

5. Should any portion of the solar field not be in operational condition for a consecutive period of twenty-four (24) months that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project proponent, by the County.

Within this sixty (60)-day period, the property owner, solar field owner, or project proponent may provide the County a written request and justification for an extension for an additional 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.

6. In no case shall a solar field which has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date the solar facility was first deemed abandoned.

## Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.11-1, cumulative impacts would be less than significant.

## Project Consistency with the Kern County General Plan

**Table 4.11-2,** *Consistency Analysis with Kern County General Plan Policies for Land Use*, provides summarizes the consistency of the proposed project with all applicable goals and policies of the Kern County General Plan and relevant planning documents that are applicable to the project site.

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Kern County General Plan Chapter 1, Land Use, Open Space and Conservation Element** | | |
| **1.3 Physical and Environmental Constraints** | | |
| **Goal 1:** To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous. | Consistent with implementation of Mitigation Measure MM 4.7-1 and MM 4.10-1. | Consistent with this policy, the proposed project would develop a solar PV power generating facility that is not located on a hazardous site. See Section 4.9, *Hazards and Hazardous Materials*, of this EIR/EA. However, a portion of the project site is designated as 8.3/2.1 (Extensive Agriculture/Seismic Hazard). As described in Section 4.7, *Geology and Soils*, of this EIR/EA, the project site is not transected by a known active or potentially active fault and is not located within a State of California Alquist-Priolo Earthquake Fault Zone. In addition, construction of the proposed project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Adherence to all applicable regulations would mitigate any potential impacts associated with fault rupture adjacent to the proposed project site. Based on the absence of any known active faults that cross, or are located in close proximity to, the project site and project compliance with applicable ordinances of the Kern County Building Code, the potential impact of fault rupture would be less than significant. Additionally, Mitigation Measure MM 4.7-1 would require implementation of recommendations from the Geotechnical Engineering Report for the proposed project, which would ensure site stability to the maximum extent possible during project construction and operation. As described in Section 4.10, *Hydrology and Water Quality*, of this EIR/EA, the project site is located outside the 500-year floodplain and classified as being within the 1 percent and 0.2 percent annual chance of flooding. Implementation of Mitigation Measure MM 4.10-1 would require preparation of a drainage plan that would design project facilities to have 1 foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures and grading for the proposed project would be designed so that water surface elevations during flood events would not be increased by more than 1 foot. Further, the proposed project would be developed in accordance with the General Plan and Floodplain Management Ordinance. Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state, and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards. As such, with implementation of mitigation measures the proposed project would be consistent with this goal. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Policy 1:** Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 (Seismic Hazard), Map Code 2.2 (Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard)) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact. | Consistent. | See 1.3, *Physical and Environmental Constraints*, Goal 1, 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, *Hydrology and Water Quality*, discusses impacts related to soil-disturbing activities and required compliance with Kern County's National Pollutant Discharge Elimination System (NPDES) applicability legislation, which requires projects to comply with the State Water Resources Control Board's Construction General Permit. |
| **1.4 Public Facilities and Services** | | |
| **Goal 1:** Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project. | Consistent with implementation of Mitigation Measure MM 4.14-2. | As discussed in Section 4.14, *Public Services*, of this EIR/EA, implementation of Mitigation Measure MM 4.14-2 would require the proposed 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. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Goal 5:** Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County. | Consistent. | Public utility impacts are evaluated in Section 4.17, *Utilities and Service Systems*. As described therein, the project site is located within the Antelope Valley Groundwater Basin; as described above, the adjudication process for the Antelope Valley Groundwater Basin was completed in 2015 which established a safe yield of 110,000 AFY. Because the amount of the water required for the proposed project would be minimal and would be obtained from an existing well with existing water rights or payment of fees, or through a Watermaster-approved new groundwater well or wells, impacts related to water supply would be less than significant and there would be sufficient water supply for other uses in Kern County. |
| **Policy 1:** New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development. | Consistent with implementation of Mitigation Measure MM 4.14-2. | The proposed project would share the existing infrastructure, including transmission line, substation, and site access roads of the Manzana Project. A new 34.5 kV electrical collector line would be constructed on private land between the Camino Solar site and the Manzana Project substation, where transformers would increase the energy from 34.5 kV to 230 kV. The energy would then be transferred to the Southern California Edison (SCE) Whirlwind Substation using the existing Manzana Project 230 kV generation-tie (gen-tie) line. This infrastructure improvement would be fully funded by the proposed project proponent. No further improvements are anticipated as a part of the proposed 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 proposed 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 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, *Public Services and Facilities*, Goal 1, above. |
| **Policy 7:** The County will ensure adequate police protection to all Kern County residents. | Consistent with implementation of Mitigation Measure MM 4.14-2. | See 1.4, *Public Services and Facilities*, Goal 1, above. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Measure C:** Project developers shall coordinate with the local utility service providers to supply adequate public utility services. | Consistent. | Project effects related to utilities are discussed in Section 4.17, *Utilities and Service Systems*, of this EIR/EA. The proposed 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 designed to produce approximately 44 MW of solar power that would be delivered to the grid, reducing dependence on fossil fuel based energy. |
| **Measure L:** Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided. | Consistent with implementation of Mitigation Measure MM 4.14-1 and 4.14-2. | Impacts to fire protection services are evaluated in Section 4.14, *Public Services*, of this EIR/EA. 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 proposed 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 rangeland and implementation of the proposed project would preclude livestock grazing on the project site; however, this would only result in loss of 4% of the entire Antelope Valley allotment, which has not been utilized for grazing since 2008. The project would not involve additional change in the existing environment besides those described in this EIR/EA and would not directly lead to other projects that would result in the loss of grazing land. Direct disturbance related to the proposed project is approximately 339 acres which would be less than significant as the Antelope Valley allotment contains 7,871 acres and has not been grazed. Additionally, discussed in Section 4.12, *Mineral Resources*, 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. 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, *Resource*, Goal 1, above. As discussed in Section 4.12, *Mineral Resources*, the project site is not located within the bounds of a mineral resource area. |
| **Goal 3:** Ensure the development of resource areas minimize effects on neighboring resource lands. | Consistent. | The solar facilities are compatible with open space, wind energy, and other resource management land uses. Furthermore, the placement of solar arrays at the project site may deter other urban and suburban land uses from being developed nearby. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Goal 6:** Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment. | Consistent. | Consistent with this policy, the proposed project is the development of a solar PV power generating facilities designed to produce approximately 44 MW of solar power. The project would develop a clean energy source that would create fewer fossil fuel emissions; thus protecting the environment. |
| **Policy 1:** Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation. | Consistent. | Impacts on natural resources are avoided or minimized through the design of the proposed project and would not affect long term use of the site. The project implements the General Plan policy of maximizing utilization of available solar resources. |
| **Policy 7:** Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities. | Consistent. | See 1.9, *Resource*, Goal 5, of the Kern County General Plan, above. |
| **Policy 11:** Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances. | Consistent with implementation of Mitigation Measure MM 4.10-1. | As discussed in Section 4.10, *Hydrology and Water Quality*, the proposed 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. The preliminary drainage plan has designed retention basins for each of the seven drainage areas that have been identified on the site. 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 study and drainage plan designed to evaluate and minimize potential increases in runoff from the project site. |
| **Policy 14:** Emphasize conservation and development of identified mineral deposits. | Consistent. | As discussed in Section 4.12, *Mineral Resources*, the project site does not contain mineral resources including petroleum. Consistent with this policy, no development would occur that would impact identified mineral deposits. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Policy 16:** The County will encourage development of alternative energy sources by tailoring its Zoning and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines published by the California State Energy Commission. | Consistent. | The project proposes the development of a solar PV power generating facility designed to produce approximately 44 MW of solar power. Consistent with this policy, the proposed project would generate solar energy and offset an equivalent amount of fossil fuel-generated electrical power. |
| **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, *Mineral Resources*, neither the project site nor surrounding areas contain State-designated mineral resource areas. Consistent with this measure, this EIR/EA used the California Geological Survey's latest maps to identify local mineral deposits in the vicinity of the project site. |
| **Measure K:** Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction). | Consistent. | The Kern County Zoning Ordinance designates portions of the project site as being within the A (Exclusive Agriculture) zone district; A WE (Exclusive Agriculture and Wind Energy combining) zone district; and A GH WE (Exclusive Agriculture, Geologic Hazard combining, and Wind Energy combining) zone district. The BLM-administered parcel is zoned as Open Space. Portions of the project are included within Kern County Agricultural Preserve Number 24 boundary, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture), this includes the portions of the project site that are currently zoned A WE (Exclusive Agriculture and Wind Energy combining; and as A GH WE (Exclusive Agriculture, Geologic Hazard combining, and Wind Energy combining). Pursuant to Sections 19.12.020, 19.12.030, 19.64.020, 19.64.030, 19.68.020, and 19.68.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for A (Exclusive Agriculture) Exclusive Agriculture, and Wind Energy combining (A WE), and Exclusive Agriculture, Geologic Hazard combing, and Wind Energy Combining (A GH WE) subject to a CUP. Pursuant to Section 19.44.020 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for Open Space (OS). The project proponent is requesting a CUP to allow for the construction and operation of a 44 MW solar facility within the aforementioned Zoning Districts in Map 216. 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 CUP, the proposed project would be consistent with applicable land use policies and regulations. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **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. |
| **1.10.1 Public Services and Facilities** | | |
| **Policy 9:** New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent. | Consistent with implementation of Mitigation Measure MM 4.14-2. | See 1.4, *Public Facilities and Services*, Goal 1, above. Impacts to public services are evaluated in Section 4.14, *Public Services*, of this EIR/EA. |
| **Policy 15:** Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development. | Consistent. | Public service impacts are evaluated in Section 4.14, *Public Services*, of this EIR/EA. This EIR/EA serves to comply with this policy. |
| **Policy 16:** The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance. | Consistent. | See 1.4, *Public Facilities and Services*, Goal 1 and Policy 1, above. |
| **Measure C:** Project developers shall coordinate with the local utility service providers to supply adequate public utility services. | Consistent. | See 1.4, *Public Facilities and Services*, Policy 3, above. |
| **Measure D:** Involve utility providers in the land use and zoning review process. | Consistent. | See 1.4, *Public Facilities and Services*, 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 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, *Hydrology and Water* Quality, of this EIR/EA. The proposed project would not require new wastewater disposal systems to be constructed, as there would be no permanent employees on the project site; therefore, no septic tanks or permanent toilets would be required and no permanent water source would be necessary. Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state, and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards. |
| **1.10.2 Air Quality** | | |
| **Policy 18:** The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals. | Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9. | Air quality and GHG impacts are evaluated in Sections 4.3, *Air Quality*, and 4.8, *Greenhouse Gas Emissions*, of this EIR/EA. Consistent with this policy, the proposed project would have less-than-significant impacts on air quality and GHG emissions with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9. Air quality mitigation measures include fugitive dust control measures; preparation of a Phased Grading Plan which minimizes grading, dust palliatives, and water suppression; a Revegetation Plan; construction equipment measures; and wind erosion reduction measures. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **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:<br>(1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and<br>(2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act. | Consistent. | See 1.10.2, *Air Quality*, Policy 18, above. This EIR/EA 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, MM 4.3-2, MM 4.3-4, MM 4.3-5, MM 4.3-6, and MM 4. 3-8 | Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR/EA. As discussed therein, implementation of Mitigation Measures MM 4.3-1, MM 4.3-2, MM 4.3-4, MM 4.3-5, MM 4.3-6, and MM 4. 3-8 would further reduce fugitive dust emissions during construction and operation, in compliance with 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 $PM_{10}$ and $PM_{2.5}$ emissions. | Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-8. | Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR/EA. As discussed in that section, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-8 would further reduce $PM_{10}$ and $PM_{2.5}$ emissions during construction and operation. |
| | | |
| **Measure F:** All discretionary permits shall be referred to the appropriate air district for review and comment. | Consistent. | Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR/EA. Consistent with this measure, the necessary discretionary permits shall be referred to the Eastern Kern Air Pollution Control District for review and comment. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Measure G:** Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:<br>a. Minimizing idling time.<br>b. Electrical overnight plug-ins. | Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-8. | Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR/EA. Consistent with this measure, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-8 would require diesel exhaust reduction strategies. |
| **Measure H:** Discretionary projects may use one or more of the following to reduce air quality effects:<br>a. Pave dirt roads within the development.<br>b. Pave outside storage areas.<br>c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.<br>d. Use of alternative fuel fleet vehicles or hybrid vehicles.<br>e. Use of emission control devices on diesel equipment.<br>f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.<br>g. Provide bicycle lockers and shower facilities on site.<br>h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).<br>i. The use and development of park and ride facilities in outlying areas.<br>j. Other strategies that may be recommended by the local Air Pollution Control Districts. | Consistent with implementation of Mitigation MM 4.3-1 and MM 4.3-8. | Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR/EA. Consistent with this measure, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-8 would further reduce adverse air quality effects. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Measure J:** The County should include PM10 control measures as conditions of approval for subdivision maps, site plans, and grading permits. | Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-8. | Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR/EA. As discussed in that section, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-8 would further reduce $PM_{10}$ and $PM_{2.5}$ emissions during construction and operation. |
| **1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation** | | |
| **Policy 25:** The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors. | Consistent with implementation of Mitigation Measures MM 4.5-1, MM 4.5-2, and MM 4.5-3. | Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources*, of this EIR/EA. This EIR/EA serves to comply with this policy and includes Mitigation Measures MM 4.5-1 through MM 4.5-4 to promote the preservation of cultural and historic resources where necessary. |
| **Measure K:** Coordinate with the California State University, Bakersfield's Archaeology Inventory Center. | Consistent Mitigation Measures MM 4.5-2. | Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources*, of this EIR/EA. 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 4.5-2. |
| **Measure L:** The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA. | Consistent with implementation of Mitigation Measures Mitigation Measures MM 4.5-1 and MM 4.5-2. | Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources*, of this EIR/EA. Consistent with this measure, impacts to archaeological and historical resources are evaluated in accordance with CEQA. This EIR/EA 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, *Geology and Soils*, of this EIR/EA. 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, *Tribal Cultural Resources*. Consistent with this measure, notification regarding the proposed project would be accomplished in accordance with the established procedures for discretionary projects and CEQA documents. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **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, *Cultural Resources*, of this EIR/EA. This EIR/EA serves to comply with this measure and includes Mitigation Measure MM 4.5-1, which would require consultation with the Native American monitor(s) to conduct a Cultural Resources Sensitivity Training for all personnel working on the proposed project. |
| **1.10.5 Threatened and Endangered Species** | | |
| **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 4.4-13. | Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR/EA. This EIR/EA serves to comply with this policy and reduce potential impacts with mitigation. Additionally, the project would be developed and operated in accordance with all local, state and federal laws pertaining to the preservation of sensitive species. |
| **Policy 28:** County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources. | Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13. | Biological Resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR/EA. This EIR/EA serves to comply with this policy and reduce potential impacts with mitigation. As part of the biological resources evaluation and habitat assessment conducted for the project, relevant state and federal agencies were contacted to ensure that appropriate information about the project site were being gathered. Specifically, an NOP of this EIR/EA was sent to state and federal agencies requesting their input on the biological resource evaluation. Similarly, this EIR/EA will also be circulated to these agencies, and staff will have the opportunity to comment on the biological resources evaluation. Therefore, the County is complying with this policy for the project. |
| **Policy 29:** The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands. | Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13. | Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR/EA. The project site is located within the boundaries of the Desert Renewable Energy Conservation Plan (DRECP) as discussed under Impact 4.11-1, above. Additionally, implementation of Mitigation Measures MM 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, *Threatened and Endangered Species*, Policy 28, above. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **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 Measures MM 4.4-1 through MM 4.4-13. | Biological resource impacts and impacts to riparian areas, are evaluated in Section 4.4, *Biological Resources*, of this EIR/EA. Consistent with this measure, Mitigation Measures MM 4.4-1 through MM 4.4-13 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. |
| **Measure Q:** Discretionary projects shall consider effects to biological resources as required by CEQA. | Consistent | Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR/EA. Consistent with this measure, the evaluation of impacts to biological resources was performed in accordance with CEQA. |
| **Measure R:** Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA. | Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13. | Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR/EA. 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. |
| **2.1 Introduction** | | |
| **Goal 4:** Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process. | Consistent | See 1.3, *Physical and Environmental Constraints*, Goal 1, of the Kern County General Plan, above. |
| **Goal 5:** Maintain a minimum [level of service] LOS D for all roads throughout the County. | Consistent | Traffic impacts are evaluated in Section 4.15, *Traffic and Transportation*, of this EIR/EA. Consistent with this goal, the proposed project would maintain a minimum LOS C or better for all roads affected by the project, including under cumulative conditions. |
| **2.3.3 Highways Plan** | | |
| **Goal 5:** Maintain a minimum Level of Service (LOS) D. | Consistent. | Traffic impacts are evaluated in Section 4.15, *Traffic and Transportation*, of this EIR/EA. Consistent with this goal, the proposed project would maintain a minimum LOS C or better for all roads affected by the project, including under cumulative conditions. |
| **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, *Traffic and Transportation*, of this EIR/EA 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 California Department of Transportation (Caltrans) and/or County code and regulations. If access roads need to be built along lines other than those on the circulation diagram map, the project proponent would negotiate necessary easements to allow this, in according with the County. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **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.<br>Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;<br>Arterial [Major Highway] Minimum 110-foot right-of-way;<br>Collector [Secondary Highway] Minimum 90-foot right-of-way;<br>Commercial-Industrial Street Minimum 60-foot right-of-way; and<br>Local Street [Select Local Road] Minimum 60-foot right-of-way. | Consistent. | Traffic impacts are evaluated in Section 4.15, *Traffic and Transportation*, of this EIR/EA. Consistent with this measure, the proposed project would implement an internal roadway network in compliance with the road network policies and would implement the Kern County Development Standards as they relate to road standards and planning requirements. |
| **Measure A:** The Planning Department shall carry out the road network Policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. Planning Department can help developers and property owners in identifying where planned circulation is to occur. | Consistent. | See 2.3.3, *Highway Plan*, Policy 3, of the Kern County General Plan, above. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **2.3.4 Future Growth** | | |
| **Goal 1:** To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon. | Consistent. | See 2.3.3, *Highway Plan*, Policy 3, of the Kern County General Plan, above. |
| **Policy 2:** The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below Level of Service (LOS) D. Utilization of the CEQA process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level. | Consistent with implementation of Mitigation Measure MM 4.15-1. | Traffic impacts are evaluated in Section 4.15, *Traffic and Transportation*, of this EIR/EA. Consistent with this policy, the proposed project would maintain a minimum LOS C for all roads affected by the project, including under cumulative conditions. 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, *Highway Plan*, Policy 1, above. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Policy 5:** When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees. | Consistent. | Consistent with this policy, the project proponent would fund improvements to driveways that provide access to any County, city, or State roads. |
| **Policy 6:** The County may accept a developer's road into the county's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors. | Consistent. | The project would not develop a public road. However, consistent with this policy, the project proponent would be required to negotiate approval with the County where the proposed private access driveways intersect public right-of-way. |
| **Measure C:** Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards. | Consistent. | Traffic impacts are evaluated in Section 4.15, *Traffic and Transportation*, of this EIR/EA. Consistent with this policy, the proposed project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards. |
| **Kern County General Plan Chapter 3, Noise Element** | | |
| **3.3 Sensitive Noise Areas** | | |
| **Goal 1:** Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained. | Consistent. | Noise impacts, sensitive receptors and County noise thresholds are evaluated in Section 4.13, *Noise*, of this EIR/EA. As discussed in that section, the proposed project would not cause significant impacts to sensitive receptors. Thus, the proposed 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/EA 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, *Sensitive Noise Areas*, 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 3:** Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise. | Consistent. | See 3.3, *Sensitive Noise Areas*, Goal 1, above. Consistent with this policy the proposed 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, *Sensitive Noise Areas*, Goal 2, above. Noise-sensitive land uses are evaluated in Section 4.13, *Noise*, of this EIR/EA. |
| **Policy 7:** Employ the best available methods of noise control. | Consistent. | See 3.3, *Sensitive Noise Areas*, Goal 1, above. |
| **Measure A:** Utilize zoning regulations to assist in achieving noise-compatible land use patterns. | Consistent. | This section of the EIR/EA 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. |
| **Measure F:** Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB $L_{dn}$ and interior noise levels in excess of 45 dB $L_{dn}$. | Consistent. | See 3.3, *Sensitive Noise Areas*, Goal 1 and Measure A, of the Kern County General Plan. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **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:<br>a) Be the responsibility of the applicant.<br>b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.<br>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 prepared acoustical analysis in accordance with the requirements of Chapter 3, *Noise Element*, Measure G, of the Kern County General Plan. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Measure I:** Noise analyses shall include recommended mitigation, if required, and shall:<br>a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.<br>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.<br>c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.<br>d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided. | Consistent. | Consistent with this measure, a noise assessment was conducted for the project and is referenced in Section 4.13, *Noise*, of this EIR/EA. In accordance with this measure, the noise assessment includes representative noise measurements, recommended best management practices, estimated noise levels, in terms of Community Noise Equivalent Level (CNEL), and estimates of noise exposure. |
| **Measure J:** Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process. | Consistent. | Consistent with this measure, the recommendations and requirements imposed pursuant to the findings of the acoustical analysis would be included with project implementation. |
| **Kern County General Plan Chapter 4, Safety Element** | | |
| **4.1 Introduction** | | |
| **Goal 1:** Minimize injuries and loss of life and reduce property damage. | Consistent. | Consistent with this goal, the proposed 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, *Hazards and Hazardous Materials*, of this EIR/EA, includes a discussion of the Kern County, Multi-Hazard Mitigation Plan, and utilizes the document as guidance for potential mitigation measures pursuant to CEQA. |
| **Kern County General Plan Chapter 4, Safety Element** | | |
| **4.6 Wildland and Urban Fire** | | |
| **Policy 1:** Require discretionary projects to assess impacts on emergency services and facilities. | Consistent with implementation of Mitigation Measure MM 4.14-1 and Mitigation Measure MM 4.14-2. | Consistent with this policy, impacts on emergency services and facilities are discussed and evaluated in Section 4.14, *Public Services*, of this EIR/EA. |
| **Policy 3:** The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers. | Consistent with implementation of Mitigation Measure MM 4.14-1. | The project would not interfere or prohibit the County's ability to meet this policy. Mitigation Measure MM 4.14-1 requires the proponent to develop a fire safety plan for use during construction and operational activities. All onsite employees would be trained on fire safety and how to respond to onsite fires, should they occur. See Sections 4.9, *Hazards and Hazardous Materials*, and 4.14, *Public Services*, and 4.18, *Wildfire*, of this EIR/EA. |
| **Policy 4:** Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents. | Consistent with implementation of Mitigation Measure MM 4.15-1. | Section 4.15, *Transportation*, of this EIR/EA 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. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **Policy 6:** All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department. | Consistent 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, *Wildland and Urban Fire*, Policy 6, above. |
| **Kern County General Plan Chapter 5, Energy Element** | | |
| **5.2 Importance of Energy to Kern County** | | |
| **Policy 7:** The processing of all discretionary energy project proposals shall comply with the State CEQA *Guidelines* directing that the environmental effects of a project must be taken into account as part of project consideration. | Consistent. | Consistent with this policy, the project proposes the development of a PV power generation facility in the desert region of Kern County. Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state, and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards. |
| **Policy 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. | Biological Resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR/EA. This EIR/EA serves to comply with this policy and reduce potential impacts with mitigation. As part of the biological resources evaluation and habitat assessment conducted for the project, relevant State and federal agencies were contacted to ensure that appropriate information about the project site were being gathered. Specifically, an NOP/IS of this EIR/EA was sent to state and federal agencies requesting their input on the biological resource evaluation. Similarly, this EIR/EA 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. |

**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, *Sensitive Noise Areas*, Goal 1, above. |
| **5.4 Electricity Resources and Generation** | | |
| **5.4.5 Solar Energy Development** | | |
| **Goal 1:** Encourage safe and orderly commercial solar development. | Consistent. | Consistent with this goal, the proposed project would develop two solar PV facilities that would generate 44 MW of solar energy and offset an equivalent amount of fossil fuel-generated electrical power. The site is on rangeland, 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 a solar PV facility capable of generating 44 MW of solar energy 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, *Air Quality*, of this EIR/EA. |
| **Policy 3:** The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards. | Consistent. | Consistent with this policy, the project proposes the development of a PV power generation facility in the desert region of Kern County. Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state, and federal regulations, would ensure that the proposed project would not pose significant environmental or public health and safety hazards. |
| **Policy 4:** The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species. | Consistent. | Consistent with this policy, the project proposes the development of two PV power generation 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. |

**TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE**

| Goals and Policies | Consistency Determination | Project Consistency |
|---|---|---|
| **5.4.7 Transmission Lines** | | |
| **Goal:** To encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects. | Consistent. | Final review of the proposed project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state, and federal regulations, would ensure that the proposed project's transmission lines would not pose significant environmental or public health and safety hazards. |
| **Policy 5:** The County should discourage the siting of above-ground transmission lines in visually sensitive areas. | Consistent. | See 5.4.7, Transmission Lines, Goal 1, above. Further, visual impacts are evaluated in Section 4.1, *Aesthetics*, of this EIR/EA. |

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Section 4.12
# Mineral Resources

## 4.12.1 Introduction

This section of the EIR/EA 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. California Department of Conservation publications and maps (CGS 1999a; CGS 1999b; DOGGR 2019), Kern County publications and maps, and aerial photos from the Phase I Environmental Site Assessment (HDR, 2017) were used in the preparation of 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 guide 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 California county. 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. **Table 4.12-1**, *Classified Mineral Resources Within Kern County*, lists the mineral resources, classification, areas and total acreage within Kern County. The State Geologist has classified 2,971 square miles of land in Kern County as Mineral Resource Zones (MRZs) of varying significance. MRZs are classified as follows (CGS 1999a):

**MRZ-1:** Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

**MRZ-2a:** Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves. Land included in MRZ-2a is of prime importance because it contains known economic mineral deposits.

**MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain inferred mineral resources as determined by their lateral extension from proven deposits or their similarity to proven

deposits. Further exploration could result in upgrading areas classified MRZ-2b to MRZ- 2a.

**MRZ-3a:** Areas containing known mineral occurrences of undetermined mineral resource 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 mineral resource significance. Land classified as MRZ 3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. 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**

| 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: Koehler, 1999.

## Petroleum Resources

Kern County is one of the richest oil-producing counties in the United States. 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 a known active or abandoned well, although anecdotal evidence mentioned in the Phase I Environmental Site Assessment alludes to some oil exploration drilling prior to the 1940s (DOGGR 2019; HDR 2017). No significant petroleum resources have been discovered to date in the western Mojave Desert.

## Sand and Gravel

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 160 miles northwest 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 30 miles west of the project site (CGS 1999a). Most of the recent alluvium in the San Joaquin Valley floor is composed of sand used as a source of road base material.

## Borax

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 5 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 6 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 producing 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 1999a).

## Limestone

Limestone (carbonate rocks) were initially quarried in Kern County 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. Approximately 15 percent of the total Portland cement produced in the State is manufactured in Kern County. The mineral resource that is closest to the project site is limestone used for cement. Limestone resources designated as MRZ-2a by the California Geological Survey are located approximately 3 miles north of the project site boundaries. The designation MRZ-2a is an area underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. The limestone deposits closest to the project site are known as the Gamble Springs Calcite. These deposits have been mapped on the Tylerhorse Canyon topographic quadrangle, Plate 11 of the publication Mineral Land Classification of Southeastern Kern County, California (CGS, 1999a).

## 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 that have been used as dimension stone, field stone, rubble, and flagstone. Most

of the dimension stone (marble and flagstone) was mined before 1904; field stone and flagstone have been mined mostly since about 1952 in the area around Randsburg.

### 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 produced 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 produced 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.

## Local Setting

The project site is primarily undeveloped and is surrounded by wind turbines with scattered residences in the region. The project site does not include land classified as an MRZ (CGS 1999b). The nearest MRZs are associated with limestone deposits known as the Gamble Springs Calcite. These deposits have been mapped on the Tylerhorse Canyon topographic quadrangle, Plate 11, approximately 3 miles north of the site (CGS 1999a).

The Kern County General Plan designates areas containing or producing potentially productive petroleum fields, natural gas, and geothermal resources, and mineral deposits of regional and Statewide significance as Map Code 8.4, Mineral and Petroleum (Minimum 5-acre Parcel Size). Uses within these areas are limited to activities directly associated with the resource extraction. Lands designated as such are located in areas roughly surrounding the areas containing existing mineral deposits; however, there is no land designated as Map Code 8.4, Mineral and Petroleum area, in the Kern County General Plan within a 5-mile radius of the project site.

# 4.12.3 Regulatory Setting

## Federal

There are no applicable federal regulations for this issue area.

## State

### Division of Oil, Gas, and Geothermal Resources

The Division of Oil, Gas, and Geothermal Resources (DOGGR) is a State agency responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. DOGGR's regulatory program promotes the sensitive 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, DOGGR requires avoidance of building over or near plugged or abandoned oil and gas wells, or requires the remediation of wells to current DOGGR standards. The California Department of Conservation – Division of Oil, Gas and Geothermal Resources will be known as the Geologic Energy Management Division (CalGEM) as of January 1, 2020.

## 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 goal of mineral land classification is to ensure that the mineral potential of land is recognized by local government decision-makers and considered before land use decisions are made that could preclude mining.

# Local

## Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for mineral resources applicable to the proposed project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the proposed project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

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

#### 1.9 Resource

***Goals***

Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations that will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources or diminish the other amenities that exist in the County.

Goal 2: To protect areas of important mineral, petroleum, and agricultural resource potential for future use.

Goal 3: To ensure that the development of resource areas minimizes effects of neighboring resource lands.

Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

***Policies***

Policy 14: Emphasize conservation and development of identified mineral deposits.

Policy 17: Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.

Policy 25: Discourage incompatible land use adjacent to Map Code 8.4 Mineral and Petroleum areas.

***Implementation Measures***

Measure H: Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.

Measure K: Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction).

# 4.12.4 Impacts and Mitigation Measures

## Methodology

Potentially significant impacts associated with the proposed project were identified based on a review of California Department of Conservation publications and maps (CGS 1999a; CGS 1999b; DOGGR 2016), Kern County publications and maps, and aerial photos included within the Phase I Environmental Site Assessment report (HDR 2017).

## 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

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

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/EA. Appendix A of this EIR/EA contains a copy of the NOP/IS and additional information regarding these issue areas:

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.

The proposed project is not located within any designated mineral resources area or DOGGR-identified oil field. Since construction and operation of the proposed project is not anticipated to 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 proposed project would have no impact.

# Project Impacts

### Impact 4.12-1: The project would result in the loss of availability of a locally important mineral resource recovery site delineated on a local General Plan, Specific Plan, or other land use plan.

The project site is not located on lands classified as an MRZ by the State, nor is it zoned for or immediately adjacent to lands designated as Mineral and Petroleum areas by the Kern County General Plan. There is no land designated as Map Code 8.4, Mineral and Petroleum area, in the Kern County General Plan within a 5-mile radius of the project site. Additionally, no active mines or petroleum extraction facilities are located within 10 miles of the project site. There are limestone resources approximately 3 miles north of the project site, but they do not intersect the project site. As a result, the proposed project would not interfere with nearby mineral extraction operations and would not result in the loss of land designated for mineral resources. Also, based on the absence of historical surface mining in the area, the potential for surface mining at the project site is considered extremely low. Further, the proposed project supports the County General Plan's Resource Goal 6 to encourage alternative sources of energy, such as solar and wind energy, while protecting the environment. As such, 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 measures are 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 17 projects proposed throughout the western Antelope Valley in Kern County, including utility-scale solar and wind energy production facilities. As shown in Table 3-5, *Cumulative Project List*, there are approximately 9 western Antelope Valley solar energy projects in Kern County. 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 resources impacts. There are no other projects, mineral extraction or otherwise, proposed within a 0.25-mile radius of the project site. The proposed project, including proposed solar facilities and the generation-tie line, either on its own or when considered cumulatively with other projects, as analyzed above, would not restrict access to any regionally or Statewide valuable mineral or petroleum resources as designated by the State, in the Kern County General Plan, or in other land use plans. As a result, the proposed project would not contribute to any cumulative impacts to mineral resources.

### *Mitigation Measures*

No mitigation measures are required.

### *Level of Significance*

Cumulative impacts would be less than significant.

Section 4.13
# Noise

## 4.13.1 Introduction

This section of the EIR/EA describes the affected environment and regulatory setting for the proposed project, as well as 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 Technical Memorandum for the Camino Solar Project* (SWCA, 2018b) located in Appendix J of this EIR/EA.

## Noise Fundamentals

An understanding of the physical characteristics of sound is useful for evaluating environmental noise impacts. The methods and metrics used to quantify noise exposure, human response, and relative judgment of loudness are also discussed, and noise levels of common noise environments are presented.

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and interferes with or disrupts normal activities. The effects of noise on people can be grouped into four general categories:

- Subjective effects (dissatisfaction, annoyance);
- Interference effects (communication and sleep interference, learning);
- Physiological effects (startle response); 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 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 dBA value of $L_{dn}$ or CNEL for a continuously operating sound source during a 24-hour period will be numerically greater than the dBA value of the 24-hour $L_{eq}$. Thus, for a continuously operating noise source producing a constant noise level operating for periods of 24 hours or more, the $L_{dn}$ will be 6 dBA higher than the 24-hour $L_{eq}$ value. For convenience, a summary of common noise metrics is provided in **Table 4.13-1,** *Common Noise Metrics*. 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. $L_{eq}$ equates to $L_{eq(1)}$ for $L_{eq}$ averaged over1 hour; e.g., $L_{eq(8)}$ equates averaged over 8 hours. |
| $L_{max}$ | Maximum Noise Level | $L_{max}$ represents the maximum instantaneous noise level experienced during a given period of time. It reflects peak operating conditions and addresses the annoying aspects of intermittent noise. |
| $L_{min}$ | Minimum Noise Level | $L_{min}$ represents the minimum instantaneous noise level experienced during a given period of time. It reflects baseline operating conditions and is commonly referenced as the noise floor. |
| $L_1$, $L_{10}$, $L_{50}$, $L_{90}$ | Percentile Noise Exceedance Levels | The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period. |

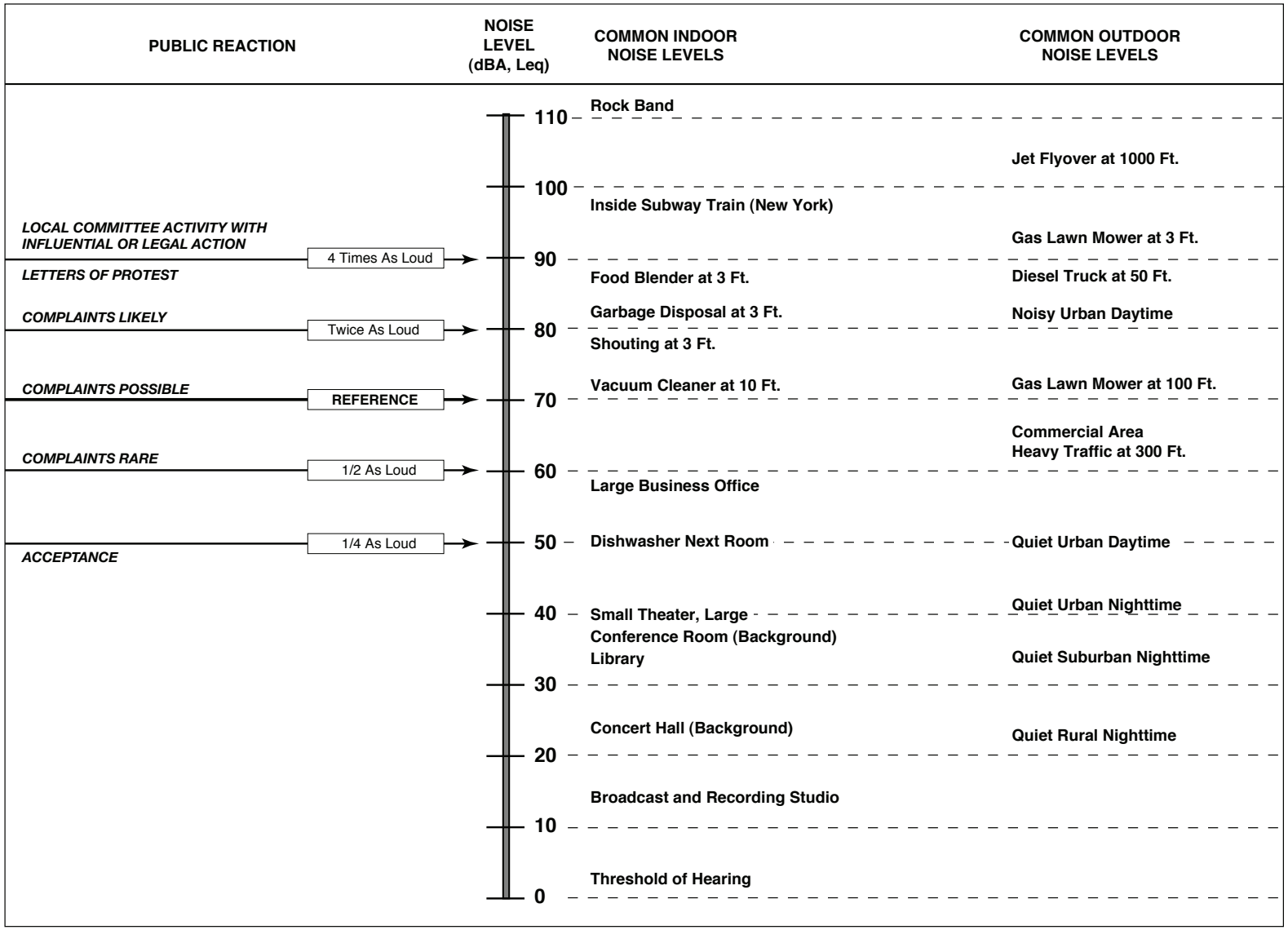



**Figure 4.13-1: EFFECTS OF NOISE ON PEOPLE**

## Vibration Fundamentals

As described in the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* (FTA, 2006), 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. Peak particle velocity is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (FTA, 2006). 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, 2006).

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, 2006).

# 4.13.2 Environmental Setting

## Project Location

The proposed project is located in the southern portion of Kern County, California, as shown in Chapter 3, Figure 3-1, *Project Vicinity*. The project site is approximately 15 miles west of State Route (SR) 14, approximately 12.5 miles south of SR-58, and approximately 8 miles north of SR-138. The unincorporated community of Rosamond is approximately 16 miles to the southeast, and the City of Tehachapi 12 miles to the north. Edwards Air Force Base is located approximately 15.5 miles east of the project site. The Los

Angeles Aqueduct also runs along the southern edge of the project boundary and east of the project site, along 170th Street West.

The project site is generally undeveloped rangeland of approximately 339 acres, which includes approximately 244 acres of public BLM lands and 94 acres of privately held lands. The project site is located in an area of low population density and scattered vacant land and is traversed by a network of dirt roads. 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 planned/existing met towers.

The project site is located within the central-eastern portion of the 189-MW Manzana Wind Power Project (Manzana Project), which began operations in 2012. Given this proximity, the project would utilize the site access roads on private land associated with Manzana Wind Power Project. In addition, there are several existing and permitted solar energy, wind energy, and transmission projects in the region where the project site is located. The RE Garland Solar Project is located immediately adjacent to the project site's eastern boundary and was approved by the Kern County Board of Supervisors in 2015. An expanded list of existing, approved, and pending projects in the vicinity of the project site is provided in Table 3-5, *Cumulative Projects List.*

# Existing Noise Environment

The existing noise environment is influenced primarily by natural noise sources, such as wind, bird vocalizations, as well as, by man-made noise sources including vehicle traffic on nearby roadways, occasional aircraft overflights, and wind turbines.

The nearest highways to the project site are SR-138, approximately 8 miles to the south; SR-58, 12.5 miles to the north; and SR-14, approximately 15 miles to the east. The project would use site access roads on private land associated with Manzana Project. The nearest airport is the Skyotee Ranch Airport, which is for private use only and is located approximately 6.5 miles south of the project site. The project site is located approximately 14 miles west of the Rosamond Skypark, a privately owned and operated residential skypark and 18 miles northwest of the General William J. Fox Airfield, the closest publicly owned airport. The proposed project is not located within the boundaries of an Airport Influence Area as identified in the Kern County Airport Land Use Compatibility Plan (ALUCP).

Therefore, the noise sources of vehicle traffic on nearby roadways, occasional aircraft overflights, and human recreational activity would generate noise that would establish the ambient noise environment of the project site and surrounding areas.

In support of the Manzana project, an ambient noise survey was performed in June 2006 and the noise levels ranged from 60 to 67 dBA CNEL (County of Kern, 2007). The noise generated from the turbines at the Manzana Wind Power site, adjacent to the project site, adds to the CNEL baseline ambient noise level in the project vicinity. In addition, other noise sources in the vicinity include agricultural activities, low-density traffic on rural roads, recreational activities, and aircraft overflights.

Daytime ambient noise levels would be anticipated to be generally characteristic of rural areas similar to a recent noise study of a solar project in unincorporated Kern County in the region (RE Gaskell West Solar Project EIR), where measured ambient daytime noise levels ranged from approximately 33.6 dBA $L_{eq}$ to 51.7 dBA $L_{eq}$ with maximum noise levels ranging from approximately 61.2 dBA $L_{max}$ to 75.5 dBA $L_{max}$.

### Noise-Sensitive Receptors

Noise-sensitive receptors are generally defined as land uses where people reside or where the presence of unwanted sound may adversely affect the existing land use. The Noise Element of the Kern County General Plan considers the following as noise sensitive areas: residences, hospitals, places of worship, and schools, as well as nature and wildlife preserves, recreational areas, and parks.

There are no residences or other noise-sensitive receptors on the project site. The closest residences are approximately 1.2 miles to the west of the project site. Other sensitive noise receptors, such as schools, hospitals, rest homes, long-term care and mental care facilities, churches, libraries, and parks are not present within a 10-mile radius. **Figure 4.13-2,** *Existing Sensitive Receptors* shows the locations of the closest sensitive receptors.

## 4.13.3 Regulatory Setting

## Federal

### Noise Control Act of 1972

The Noise Control Act of 1972 (42 USC 4910) establishes a national policy to promote an environment for all Americans to be free from noise that jeopardizes their health and welfare. The Act establishes a means for the coordination of federal research and activities in noise control, authorizes the establishment of federal noise emissions standards for products distributed in commerce, and provides the noise-emission and noise-reduction characteristics of such products to the public.

### United States Environmental Protection Agency, Environmental Noise Levels

The United States Environmental Protection Agency (USEPA) provided guidance on environmental noise levels in *Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety* (USEPA, 1974), commonly referenced as the "Levels Document," that establishes an $L_{dn}$ of 55 dBA, as the requisite level, with an adequate margin of safety, for areas of outdoor uses, including residences and recreation areas. The Levels Document does not constitute USEPA regulations or standards but identifies safe levels of environmental noise exposure without consideration of technical or economic feasibility for achieving these levels or other potentially relevant considerations.

### Federal Energy Regulatory Commission, Noise Guidelines

Federal Energy Regulatory Commission (FERC) *Noise Guidelines on Noise Emissions from Compressor* Stations, *Substations, and Transmission Lines* (18 CFR 157.206[d]5), require that the noise attributable to any new compressor stations, compression added to an existing station, or any modification, upgrade, or update of an existing station must not exceed a $L_{dn}$ of 55 dBA at any pre-existing noise-sensitive area (such as schools, hospitals, or residences). This policy was adopted based on the USEPA-identified level of significance of 55 $L_{dn}$ dBA.

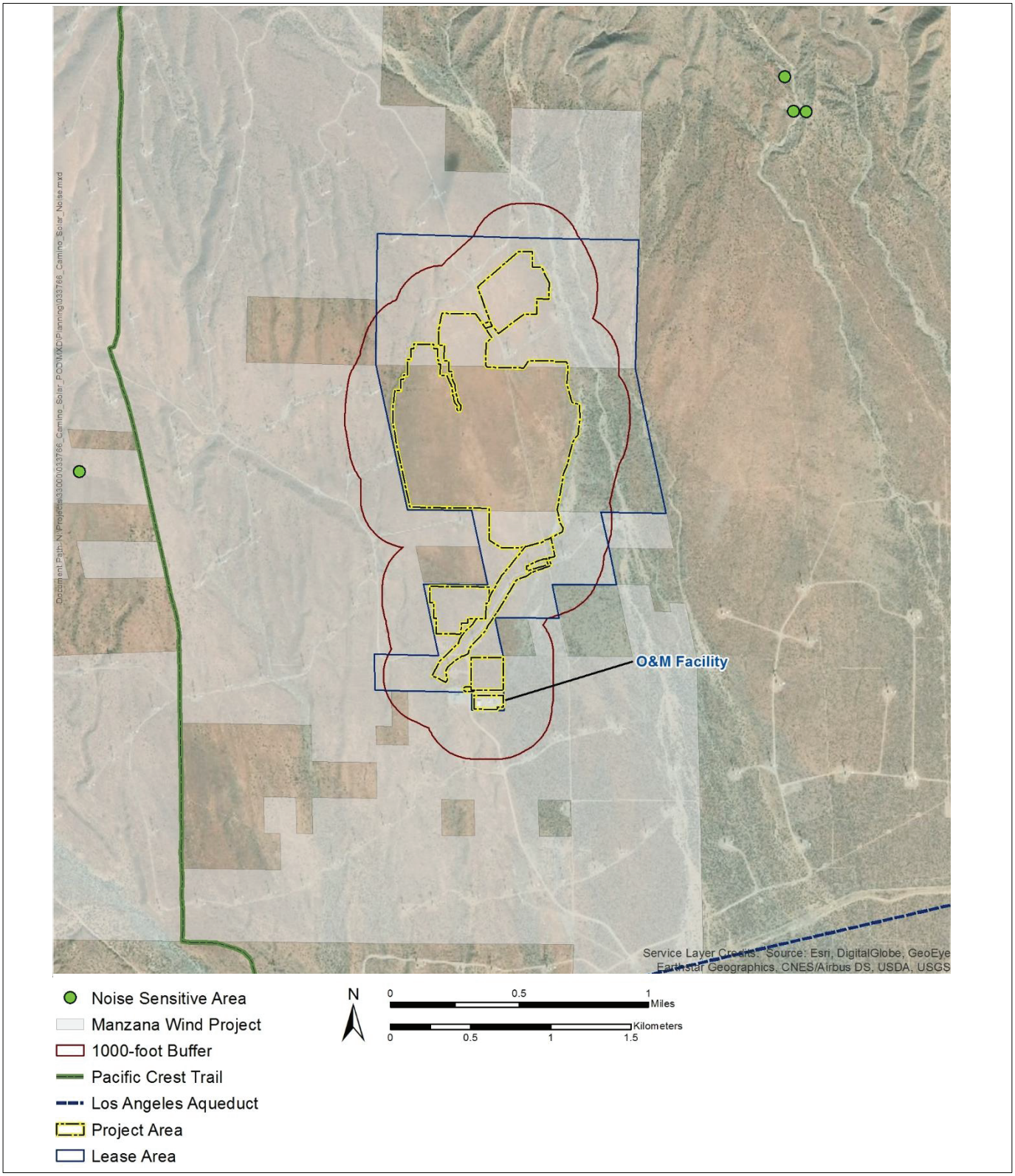



**Figure 4.13-2: EXISTING SENSITIVE RECEPTORS**

## Federal Energy Regulatory Commission, Noise Guidelines

Federal Energy Regulatory Commission (FERC) *Noise Guidelines on Noise Emissions from Compressor* Stations, *Substations, and Transmission Lines* (18 CFR 157.206[d]5), require that the noise attributable to any new compressor stations, compression added to an existing station, or any modification, upgrade, or update of an existing station must not exceed a $L_{dn}$ of 55 dBA at any pre-existing noise-sensitive area (such as schools, hospitals, or residences). This policy was adopted based on the USEPA-identified level of significance of 55 $L_{dn}$ dBA.

## Occupational Safety and Health Administration, Occupational Noise Exposure; Hearing Conservation Amendment (Federal Register 48 [46], 9738-9785, 1983

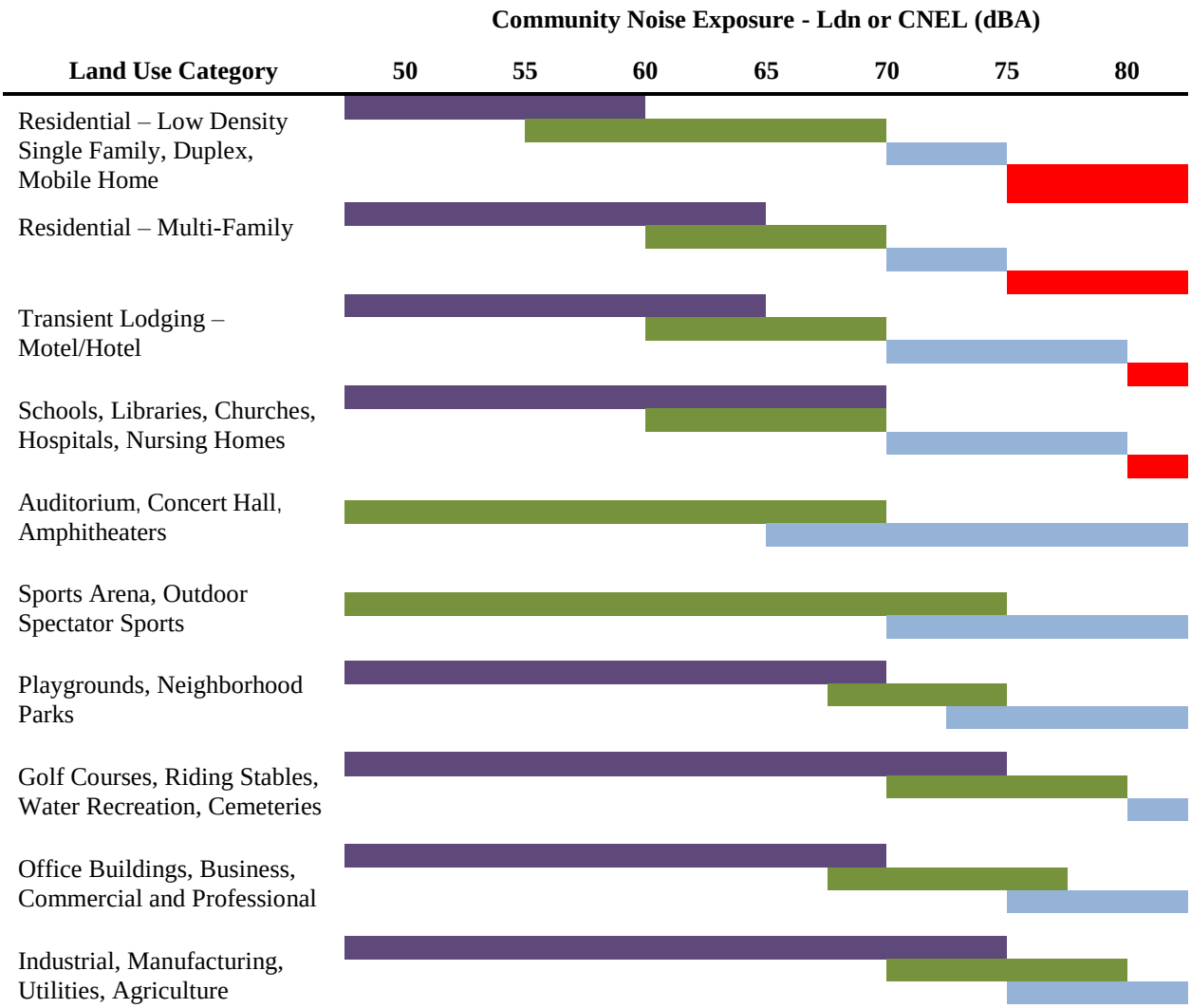
The standard stipulates that protection against the effects of noise exposure shall be provided for employees when sound levels exceed 90 dBA over an 8-hour exposure period. Protection shall consist of feasible administrative or engineering controls. If such controls fail to reduce sound levels to within acceptable levels, personal protective equipment shall be provided and used to reduce exposure of the employee. Additionally, a Hearing Conservation Program must be instituted by the employers whenever employee noise exposure equals or exceeds the action level of an 8-hour time-weighted average sound level of 85 dBA $L_{eq}$. The Hearing Conservation Program requirements consist of periodic area and personal noise monitoring, performance and evaluation of audiograms, provision of hearing protection, annual employee training, and record keeping.State

The State requires all municipalities to prepare and adopt a comprehensive long-range General Plan, which must contain a noise element (California Government Code Section 65302(f) and Section 46050.1 of the Health and Safety Code). The requirements of the noise element include describing the noise environment quantitatively using a cumulative noise metric such as CNEL or $L_{dn}$, establishing noise/land use compatibility criteria, and establishing programs for achieving and/or maintaining land use compatibility. Noise elements should address all major noise sources in the community, including mobile and stationary noise sources. In California, most Cities and Counties have also adopted noise ordinances, which serve as enforcement mechanisms for controlling noise.

The California Department of Health Services has studied the correlation of noise levels and their effects on various land uses. The Governor's Office of Planning and Research (State of California, 2003) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, for the Noise Elements of local General Plans. The guidelines are the basis for most noise element land use compatibility guidelines in California.

The land use compatibility for community noise environment chart identifies the normally acceptable range for several different land uses, as shown in **Figure 4.13-3**. Persons in low-density residential settings are most sensitive to noise intrusion, with noise levels of 60 dBA CNEL and below considered "acceptable." For land uses such as schools, libraries, churches, hospitals, and parks, acceptable noise levels are up to 70 dBA CNEL.

**FIGURE 4.13-3: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT**




| | |
|---|---|
| | **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.

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), which set forth an interior standard of 45 dBA CNEL or $L_{dn}$ in any habitable room, requiring 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.

# Local

## Kern County General Plan

The Noise Element of the Kern County General Plan (County of Kern, 2009b) provides goals, policies, and implementation measures applicable to noise, which, as related to the project, are provided below. The major purpose of the County's Noise Element is to establish reasonable standards for maximum noise levels desired in Kern County, and to develop an implementation program which could effectively mitigate potential noise problems and not subject residential or other sensitive noise land uses to exterior noise levels in excess of 65 dBA $L_{dn}$, and interior noise levels in excess of 45 dBA $L_{dn}$.

In accordance with the Energy Element, Policy 10, of the General Plan, the County may also require the preparation of an acoustical analysis for energy project proposals that might impact sensitive and highly sensitive uses. Applicable goals, policies, and implementation measures from the County's General Plan that are relevant to the proposed project are summarized below.

### Chapter 3. Noise Element

#### *3.3 Sensitive Noise Areas*

#### *Goals*

Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.

Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

***Policies***

Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses,

Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise,

Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.

Policy 7: Employ the best available methods of noise control.

***Implementation Measures***

Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.

Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.

Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB Ldn and interior noise levels in excess of 45 dB Ldn.

Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:

a. Be the responsibility of the applicant.

b. Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.

c. Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.

Measure I: Noise analyses shall include recommended mitigation, if required, and shall:

a. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

b. Include estimated noise levels, in terms of CNEL, for existing and projected future (10 – 20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.

c. Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.

d. Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

### Chapter 5. Energy Element

Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

## Kern County Code of Ordinances

Chapter 8.36 of the Kern County Code of Ordinances also addresses noise issues, including acceptable hours of construction, and limitations on construction-related noise impacts on adjacent sensitive receptors. Noise-producing construction activities that are audible to a person with average hearing ability at a distance of 150 feet from the construction site, or if the construction site is within 1,000 feet of an occupied residential dwelling, are prohibited between the hours of 9 p.m. to 6 a.m. on weekdays, and 9 p.m. to 8 a.m. on weekends. However, the following exceptions are permitted:

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.

# Ground-borne Vibration

There are currently no federal, State, or local regulatory standards for ground-borne vibration. However, the California Department of Transportation (Caltrans) has developed vibration criteria based on potential structural damage risks and human annoyance. Caltrans' threshold criteria pertaining to building damage and human annoyance for continuous and transient events are summarized in **Table 4.13-2** and **Table 4.13-3**, respectively, below.

**TABLE 4.13-2: VIBRATION CRITERIA FOR STRUCTURAL DAMAGE**

| | Vibration Level (in/sec PPV) | |
|---|---|---|
| **Structure and Condition** | **Transient Sources** | **Continuous/Frequent Intermittent Sources** |
| Extremely fragile historic buildings, ruins, ancient monuments | 0.12 | 0.08 |
| Fragile buildings | 0.2 | 0.1 |
| Historic and some old buildings | 0.5 | 0.25 |
| Older residential structures | 0.5 | 0.3 |
| Newer residential structures | 1.0 | 0.5 |
| Modern industrial/commercial buildings | 2.0 | 0.5 |

NOTES: Transient sources create a single isolated vibration event, such as blasting or ball drops. Traffic, train, and most construction vibrations are considered continuous.

in/sec ppv = inches per second peak particle velocity

SOURCE: LSA, 2016

As shown in Table 4.13-2, the structural damage threshold, at which there is a risk to normal structures from continuous or frequent vibration sources, is 0.3 in/sec PPV for older residential structures and 0.5 in/sec PPV for newer building construction. The 0.5 in/sec PPV threshold also represents the structural damage threshold applied to older structures for transient vibration sources.

**TABLE 4.13-3: VIBRATION CRITERIA FOR HUMAN ANNOYANCE**

| | Vibration Level (in/sec PPV) | |
|---|---|---|
| **Human Response** | **Transient Sources** | **Continuous/Frequent Intermittent Sources** |
| Barely perceptible | 0.04 | 0.01 |
| Distinctly perceptible | 0.25 | 0.04 |
| Strongly perceptible | 0.9 | 0.1 |
| Annoying to people in buildings | -- | 0.2 |
| 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: Kern County, 2016.

As shown in Table 4.13-3, with regard to human perception, vibration levels would begin to become distinctly perceptible at levels of 0.04 in/sec PPV for continuous or frequent vibration sources and 0.25 in/sec PPV for transient vibration sources. Continuous vibration levels are considered annoying for people in buildings at levels of 0.2 in/sec PPV.

# 4.13.4 Impacts and Mitigation Measures

## Methodology

The proposed project's potential noise and vibration impacts have been evaluated using a variety of resources, including the project's Noise Technical Memorandum (SWCA, 2018b), provided in Appendix J of this EIR/EA, as well as recent EIRs for other solar projects in Kern County (i.e., Gaskell West and RB Inyokern). Using these resources, described in more detail below, and professional judgment, impacts were analyzed according to CEQA significance criteria described in the subsequent section.

### Construction Noise

Construction of the project is expected to occur over approximately 6 to 9 months, beginning in late 2020. Although project construction may occur over a period of 6 to 9 months, this analysis assumes that construction would occur over a period of 6 months since it results in a more conservative analysis. Project construction activities generally include three main categories: (1) site preparation; (2) system installation; and (3) testing, commissioning, and cleanup. Project construction noise would be generated primarily from: (1) site preparation, construction, and installation and testing of the solar panels on the project site; and

(2) vehicle traffic on access roads leading to the site from construction crew daily commutes and the transport of construction equipment and materials to the site. Transport of construction equipment would result in a relatively high, single-event, noise level generated at the source (e.g., a passing haul truck would generate up to 84 dBA $L_{max}$ at a reference distance of 50 feet); however, the effect on longer-term (hourly or daily) ambient noise levels would be minimal.

The construction of the project would require various pieces of construction equipment. **Table 4.13-4**, *Noise Levels of Project Construction Equipment*, lists the anticipated construction equipment required for project construction and the corresponding operational noise level, based on a usage factor, generated at a reference distance of 50 feet from the equipment.

**TABLE 4.13-4: NOISE LEVELS OF PROJECT CONSTRUCTION EQUIPMENT**

| Type of Equipment | Impact Device? (Yes/No) | Acoustical Usage Factor | (dBA $L_{eq}$ at 50 feet) |
|---|---|---|---|
| Crane | No | 16 | 81 |
| Excavator | No | 40 | 81 |
| Grader | No | 40 | 85 |
| Tractor/Loader/Backhoe | No | 40 | 84 |
| Roller | No | 20 | 80 |
| Scraper | No | 40 | 84 |
| Trencher | No | 50 | 81 |

SOURCE: FHWA, 2008. Roadway Construction Noise Model.

As shown in Table 4.13-4, the hourly average noise levels for construction equipment expected to be used for project construction ranges approximately 80 to 85 dBA $L_{eq}$ at 50 feet.

Project construction would occur in specific phases, each of which has its own mix of equipment types and number and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, also the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. The site preparation phase would include removal of vegetation and topsoil, compactions of subgrade, and shaping of ditches and swales. This phase tends to generate the highest noise levels during construction, as the heavy equipment needed for earthmoving generates the highest noise levels.

The photovoltaic (PV) system installation phase of project construction would include the installation of the mounting and support structures. The structure supporting the PV module arrays at the project site would consist of cylindrical steel pipes, which would be driven into the soil using pneumatic techniques, similar to a hydraulic impact hammer attachment on the boom of a rubber-tired backhoe excavator.

The final phase of construction includes installation of underground electrical cables collection system and construction of the inverters, potential battery storage facility, and unmanned operations and maintenance (O&M) buildings. If required, the onsite switchyard area would be excavated for the transformer equipment and control house foundation, and the oil containment area.

Project construction activities would temporarily increase the noise levels at the project site, mainly from the operation of heavy-duty construction equipment. However, when the construction equipment is used in combination, as during a construction phase, noise levels would be higher. **Table 4.13- 5**, *Noise Levels of Project Construction Phases*, provides estimated noise levels of multiple pieces of construction equipment associated with construction phases.

**TABLE 4.13-5: NOISE LEVELS OF PROJECT CONSTRUCTION PHASES**

| Construction Phase | Noise Level (dBA Leq) at 50 feet |
|---|---|
| Ground Clearing (Grading) | 85 |
| Excavation | 89 |
| Foundations | 78 |
| Erection (Installation) | 87 |
| Finishing (Cleanup) | 89 |

NOTES: Values correspond to a typical range of noise levels at an office building, hotel, hospital, school, or public works construction site.

SOURCE: USEPA, 1971. Equipment, and Home Appliances.

As shown in Table 4.13-5, the excavation and finishing phases would generate the highest noise levels of 89 dBA $L_{eq}$ at 50 feet.

## Construction Traffic Noise

Construction would also generate offsite noise from vehicle traffic. Noise from daily construction worker commute trips and truck trips would contribute to the existing traffic volumes, potentially increasing traffic noise levels along roadways used to access the project site. Approximately 340 daily trips (passenger car equivalent [PCE]) are forecasted to be generated for short-term construction purposes (Omni-Means, 2017). Off-site construction noise levels are assessed based on the potential to result in a perceptible increase in traffic-related noise levels. However, to result in a perceptible increase (3 dBA or greater) in the resulting traffic noise level, a doubling of the noise source (i.e., doubling vehicle traffic volumes) would be required.

Project construction would occur in accordance with all federal, State, and Kern County zoning codes and requirements. Site preparation would be consistent with Kern County's best management practices. Noise-generating construction activities would be limited to the allowable Kern County construction hours noted above. Stationary equipment and machines with the potential to generate a substantial increase in noise or vibration levels would be located away from noise-sensitive receptors to the extent feasible to minimize potential noise and vibration levels.

## Operational Stationary-Source Noise

Once constructed, it is anticipated that operational noise sources would not increase ambient noise levels above the baseline condition at the property boundary, which includes operational noise from the adjacent turbines at the Manzana project site, adding to the baseline ambient noise at the project location. There would be the hum of electrical equipment, including the inverter and transformer for each solar array, but this would be similar to existing electrical facilities in the project area. In addition, because solar panels produce power only during daylight hours, the inverters would be silent at night. Any noise at night caused

by operation of the batteries at the facility is not expected to exceed ambient noise levels at the project property boundary. Furthermore, inverters would be surrounded by the solar panel arrays, which would potentially act as a noise barrier.

Project operational noise sources would include ground-mounted PV system blocks, in which the design includes an optional axis tracker that would enable panels to rotate to follow the sun's path. Noise levels from similar PV systems are documented to range up to approximately 48 dBA at 40 feet. Operational noise sources would also include transformers and inverters. Single step-up, three-phase, pad-mounted, ventilated transformers can generate noise levels ranging up to approximately 82 dBA $L_{eq}$ at a reference distance of 1 meter (approximately 3.3 feet). Fan-cooled inverters can generate noise levels of up approximately 79.4 dBA $L_{eq}$ at a reference distance of 1 meter (approximately 3.3 feet). The project may also include a battery system for electrical storage, which would be operationally silent, and the flywheel system would generate minimal noise. While the system to be used is unknown, if cooling fans are required by the battery system it is anticipated they would be equivalent to the noise produced by the inverters (approximately 79.4 dBA $L_{eq}$ at approximately 3.3 feet), or other commercial heating, ventilation, and air conditioning units.

Electricity generated by project operation would be delivered offsite via gen-tie lines, which have the potential to emit electrical discharge (or corona discharge) noise. The gen-tie line would incorporate standard design practices and reduce corona discharge noise to well below 65 dBA at a distance of 10 feet.

## Operational Traffic Noise

Following construction, it is estimated that day-to-day operations and maintenance trips would be minimal, i.e., four to five trips per year (Omni-Means, 2017) to wash the panels and conduct maintenance and repair. As these activities and vehicle trips would be minimal, project operation would not generate a substantial amount of operational traffic-related noise.

## Decommissioning Noise

The project facility has an anticipated operational life of approximately 35 years, after which the project proponent of the facility may choose to update the site technology and recommission, or decommission and remove the systems and their components. If decommission occurs, activities associated with decommissioning would be similar or lower than the noise levels experienced under the worst-case construction activities. Therefore, noise impacts from decommissioning are anticipated to be identical or less than those occurring during construction.

## Construction Ground-borne Vibration

Ground-borne vibration is almost exclusively a concern for buildings and its inhabitants, and is rarely perceived as a problem outdoors, where the motion may be discernable, but without the effects associated with the shaking of a building there is less adverse reaction. Ground-borne vibration during construction activity is temporary and would cease to occur after project construction is completed. **Table 4.13-6**, *Vibration Source Amplitudes for Construction Equipment*, shows the vibrational levels for typical construction equipment at 25 feet.

**TABLE 4.13-6: VIBRATION SOURCE AMPLITUDES FOR CONSTRUCTION EQUIPMENT**

| | Reference PPV/$L_V$ at 25 feet | |
|---|---|---|
| **Equipment** | **PPV (in/sec)** | **$L_V$ (VdB)[1]** |
| Pile Driver (Impact), Typical | 0.644 | 104 |
| Pile Driver (Sonic), Typical | 0.170 | 93 |
| **Vibratory Roller** | **0.210** | **94** |
| Hoe Ram | 0.089 | 87 |
| **Large Bulldozer[2]** | 0.089 | 87 |
| Caisson Drilling | 0.089 | 87 |
| **Loaded Trucks** | **0.076** | **86** |
| Jackhammer | 0.035 | 79 |
| **Small Bulldozer** | **0.003** | **58** |

SOURCE: FTA, 2006

1 RMS vibration velocity in decibels (VdB) re 1 µin/sec.

2 Equipment shown in bold is expected to be used on the project site.

µin/sec = micro-inches per second
FTA = Federal Transit Administration
in/sec = inches per second
LV = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity in decibels

Ground-borne vibration may be induced by traffic and construction activities, such as earthmoving. The project would require the use of a crane, excavator, grader, vibratory roller, scraper, tractor/loader/backhoe, and trencher, which generate vibration. Of these, the roller would generate the highest vibration level, at 0.210 in/sec PPV at 25 feet, as shown in Table 4.13-6.

The erection of the solar arrays would include support structures that may need to be driven into the soil using pneumatic techniques, which could cause localized vibrations. However, significant vibration, typically associated with activities such as impact pile driving, would not be an activity associated with the Project.

## Operational Vibration Impacts

The project's constructed facilities would not include sources of vibration. Operation of the project would involve O&M traffic, including O&M staff commute and regular maintenance truck (0.076 in/sec PPV at 25 feet), and panel washing activity (vibration not measurable). As these activities and maintenance and worker vehicle trips would be minimal, the project would not generate a substantial amount of operational-related or traffic-related vibration. Therefore, there would be no operational vibration impacts.

# 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 noise.

A project would have a significant impact on noise if it would result in:

a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies?

b. Generation of excessive ground-borne vibration or ground-borne noise levels?

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d. For a project located within the 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/EA. Please refer to Appendix A of this EIR/EA 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 proposed project is not located within the boundaries of an Airport Influence Area as identified in the Kern County ALUCP. The nearest airport is the Skyotee Ranch Airport, which is for private use only and is located 6.5 miles south of the project site. The project site is located approximately 14 miles west of the Rosamond Skypark, a privately owned and operated residential skypark and 18 miles northwest of the General William J. Fox Airfield, the closest publicly owned airport. Therefore, would be no significant impact resulting from people residing or working in within a Kern County ALUCP or in the vicinity of a private airstrip being exposed to excessive noise levels from the project.

## Substantial Temporary or Permanent Ambient Noise Increase in Excess of Standards

CEQA does not define a threshold for "significant increase" with respect to noise exposure; however, based on human response and commonly applied industry standards, the following thresholds of significance would be applied to the proposed project, as set forth by the CEQA *Guidelines*:

- The project causes the ambient noise level measured at the property line of affected uses to increase by 3 dBA to a level at or within the "normally unacceptable" or "clearly unacceptable" noise/land use compatibility category.
- The project causes any 5 dBA or greater noise increase.

Kern County regulates noise levels per the requirements of Chapter 8.36 (Noise Control) of the Kern County County Municipal Code, 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.

For operational noise, the Kern County General Plan Noise Element requires that proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB $L_{dn}$ and interior noise levels in excess of 45 dB $L_{dn}$.

## Excessive Ground-borne Vibration

Kern County does not have regulations that define acceptable levels of vibration.

For the purposes of assessing potential ground-borne vibration impacts associated with the proposed project, Caltrans's vibration criteria for potential structural damage risks and human annoyance was used in this analysis. Accordingly, ground-borne vibration levels would be considered significant if predicted short-term construction or long-term operational ground-borne vibration levels attributable to the proposed project would exceed the recommended criteria for structural damage or human annoyance (i.e., 0.25 and 0.1 in/sec PPV, respectively) at the nearest offsite existing structure. **Table 4.13-7**, *Construction Vibration Damage Criteria*, lists the FTA potential vibration building damage criteria associated with construction activities, as suggested in the *FTA Transit Noise and Vibration Impact Assessment* (FTA, 2006). **Table 4.13-8**, *Vibration Damage Potential Criteria*, includes Caltrans vibration building damage criteria (Caltrans, 2013).

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.

**TABLE 4.13-7: CONSTRUCTION VIBRATION DAMAGE CRITERIA**

| Building Category | PPV (in/sec) | Approximate $L_V$ (VdB)[1] |
|---|---|---|
| Reinforced concrete, steel, or timber (no plaster) | 0.50 | 102 |
| Engineered concrete and masonry (no plaster) | 0.30 | 98 |
| Non-engineered timber and masonry | 0.20 | 94 |
| Buildings extremely susceptible to vibration damage | 0.12 | 90 |

[1] RMS vibration velocity in decibels (VdB) re 1 µin/sec.

µin/sec = inches per second
FTA = Federal Transit Administration
in/sec = inches per second
PPV = peak particle velocity
RMS = root-mean-square
$L_V$ = velocity in decibels

SOURCE: Transit Noise and Vibration Impact Assessment (FTA, 2006).

**TABLE 4.13-8: VIBRATION DAMAGE POTENTIAL CRITERIA**

| Structure and Condition | Maximum PPV (in/sec) | |
|---|---|---|
| | Transient Sources[1] | Continuous/Frequent Intermittent Sources[2] |
| Extremely fragile historic buildings, ruins, and ancient monuments | 0.12 | 0.08 |
| Fragile buildings | 0.20 | 0.10 |
| Historic and some old buildings | 0.50 | 0.25 |
| Older residential structures | 0.50 | 0.30 |
| New residential structures | 1.00 | 0.50 |
| Modern industrial/commercial buildings | 2.00 | 0.50 |

[1] Transient sources create a single, isolated vibration event, such as blasting or drop balls.

[2] Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Caltrans = California Department of Transportation

in/sec = inches per second

PPV = peak particle velocity

SOURCE: Transportation and Construction Vibration Guidance Manual (Caltrans, 2013).

# Project Impacts

**Impact 4.13-1: The project would result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies.**

## Construction

### *Construction Traffic*

Vehicle traffic noise from daily construction worker commute trips would contribute to traffic noise levels along roadways used to access the project site. However, a doubling of vehicle traffic volume is required to result in a perceptible (3 dBA or greater) increase in the resulting traffic noise level.

Based on the project traffic analysis (Omni-Means, 2017), the project construction would generate a maximum of 122 peak hour trips, which incorporates a high-end worker trip estimate and a PCE factor of 2.0 for large trucks, and an Average Daily Trips (ADT) of 340 trips, inclusive of the PCE factor for trucks. Project traffic would access the site via Rosamond Boulevard from SR-14, which have the lowest existing ADT segments of approximately 770 (170th Street to 90th Street) and 15,900 (north of Rosamond Boulevard) (Omni-Means, 2017). Therefore, an increase of 340 average daily project construction trips would not result in a perceptible increase in traffic noise levels along the roadways accessing the project site. The additional construction traffic volumes would not contribute to any measurable increase in the overall traffic noise levels due to the small percentage of the construction traffic compared to the existing traffic volumes on these offsite roads, which would not result in any significant traffic noise impacts to

offsite sensitive receptors. Therefore, overall short-term construction related impacts associated with worker commute and equipment transport to and around the project site would be less than significant.

### *Construction Activities*

Multiple pieces of equipment would operate at substantial distances from one another as construction activities occur throughout the project site. As shown in Table 4.13-4, average noise levels generated by project construction equipment would range from approximately 80 to 85 dBA $L_{eq}$ at a reference distance of 50 feet. As shown in Table 4.13-5, average noise levels generated by project construction phases would range from approximately 78 to 89 dBA $L_{eq}$ at a reference distance of 50 feet.

There are no occupied residential dwellings located within 1,000 feet of the Project site. The closest noise-sensitive receptors to the project site are residences located approximately 1.2 miles to the west of the project. Other sensitive noise receptors, such as schools, convalescent and acute care hospitals, parks and recreational areas, and churches, are not located within 1,000 feet of the project site, and none are present within a 10-mile radius.

The worst-case project construction scenario during the excavation phase, with multiple pieces of equipment operating simultaneously near the project site boundary (minimum 20 feet from the boundary), would generate approximately 89 dBA $L_{eq}$ at 50 feet, and would attenuate with distance at a rate of 6 dBA per doubling of distance to the nearest residence at approximately 1.2 miles (6,336 feet) to an average noise level of approximately 46.9 dBA $L_{eq}$, which is less than estimated ambient noise levels.

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. The County has not established any noise level limit for construction activity.

Therefore, the project would not generate a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards, and impacts would be less than significant.

## Operation

### Operational Traffic

The daily maintenance vehicle trips at the project site would not create a substantial increase of vehicular noise along access roads to the project site. As assumed in the traffic analysis prepared for the project, the project would not result in a doubling of the traffic volumes on roadways accessing the project site, and therefore, the noise level increase would be substantially below the perceptible level of a 3 dBA increase. As such, operational traffic noise levels from operation of the project would be minimal, and impacts would be less than significant.

### Operational Activities

During project operation, noise levels from similar ground-mounted PV systems range up to approximately 48 dBA $L_{eq}$ at 40 feet, with lower than estimated ambient noise levels, and would attenuate with distance at the rate of 6 dBA per doubling of distance at the closest offsite noise-sensitive receptors located at

approximately 6,336 feet. Therefore, the project operational noise levels at the residences would be estimated to be similar to less than ambient noise levels estimated at the offsite residences, and when combined, averaged ($L_{eq}$), and weighted over a 24-hour period ($L_{dn}$), would still be much lower than the County's 65 dBA $L_{dn}$ exterior noise standard for residential uses. Therefore, impacts from the ground-mounted PV systems would be less than significant.

Other operational noise sources include the transformers and inverters, which would be located more than 6,336 feet from the nearest offsite noise-sensitive receptors. Operational noise levels from inverters and transformers of approximately 82 and 79 dBA $L_{eq}$ at approximately 3.3 feet (1 meter), respectively, would attenuate with distance to approximately 46 and 43 dBA $L_{eq}$ at 170 feet, respectively. Combined noise levels from simultaneous operation of the inverters and transformers would result in approximately 48 dBA $L_{eq}$ at the nearest offsite noise-sensitive receptor. This noise level estimate assumes a direct line of sight from the receptor to the operating equipment. These noise levels, averaged over a 24-hour period with weighting factor added to the nighttime hours, would be below the County's 65 dBA $L_{dn}$ exterior noise standard for residential uses and, thus, noise impacts from the inverters and transformers would be less than significant.

The proposed gen-tie line would result in electrical discharge (corona discharge) noise below 65 dBA at 10 feet, which would attenuate to 59 dBA at 20 feet, 53 dBA at 40 feet, 47 dBA at 80 feet, etc. Therefore, noise from corona discharge would not be perceptible above background noise levels at the nearest sensitive receptor and noise impacts from the gen-tie line would be less than significant.

## 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 noise impacts would be less than significant.

In summary, project construction, operation, and decommissioning 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. Therefore, noise impacts would be less than significant.

### *Mitigation Measures*

No mitigation would be required.

### *Level of Significance*

Impacts would be less than significant.

### Impact 4.13-2: The project would generate excessive ground-borne vibration or ground-borne noise levels.

The vibratory rollers to be used in project construction and that produce the greatest ground-borne vibration levels, as pile driving, which often creates the greatest ground-borne vibration levels, would use a relatively less impactful pneumatic boom attachment or drilling technique. Large vibratory rollers produce ground-borne vibration levels ranging up to approximately 0.21 in/sec PPV at 25 feet from the operating equipment. The closest offsite occupied residential structures would be located over 6,336 feet from construction activities. At this distance, vibration levels from all types of equipment expected to be used for the project construction would be reduced to below 0.05 in/sec PPV. This range of vibration levels at the nearest

residences would not reach the vibration level threshold for older residential structures, which, as described in Table 4.13-2 is 0.5 PPV for transient sources and 0.3 PPV for continuous/frequent intermittent sources. Buildings or structures at longer distances from the project site would experience much lower vibration level from project construction. Therefore, ground-borne vibration impacts resulting from project construction would be less than significant.

Since operation of the project would involve mostly regular maintenance trucks accessing the project site (0.076 in/sec PPV) and panel washing activities (not measurable) at a sufficient distance from structures (i.e., over 100 feet away from structures), project-related vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers.

### *Mitigation Measures*

No mitigation would be required.

### *Level of Significance*

Impacts would be less than significant.

### Impact 4.13-3: The project would result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

### *Operational Activities*

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, 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 under Impact 4.13-3, project operational noise levels at residences would be estimated to be similar to less than ambient noise levels estimated at the offsite residences, and when combined, averaged (Leq), and weighted over a 24-hour period (Ldn). The proposed gen-tie line would result in electrical discharge (corona discharge) noise that would not be perceptible above background noise levels at the nearest sensitive receptor. Operational traffic noise levels from operation of the project would be minimal and therefore, the noise level increase would be substantially below the perceptible level of a 3 dBA increase. 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 are proposed or operating in the project area. Due to the localized nature of construction and operational noise impacts (up to 1,000 feet and 1 mile, respectively), any potential cumulative noise impacts would be largely limited to areas within 1 mile of the project site. As shown in Chapter 3, *Project Description*, Figure 3-7, *Cumulative Projects Map*, based on Table 3-6, *Cumulative Projects List*, there are no other solar projects within 1 mile of the project site.

Noise and vibration impacts are highly localized as indicated by predominately less-than-significant project-related noise and vibration impacts. Therefore, the project would not have any measurable noise effect cumulatively with other solar development activity in Kern County. Overall, when considered with other past, present, and reasonably foreseeable future projects, the proposed project would not result in a cumulatively considerable contribution to operational noise impacts.

### *Mitigation Measures*

No mitigation would be required.

### *Level of Significance*

Cumulative impacts would be less than significant.

Section 4.14
# Public Services

## 4.14.1 Introduction

This section of the EIR/EA describes the affected environment and regulatory setting pertaining to public services, which include fire and law enforcement. This section also addresses the potential impacts on public services that would result from implementation of the proposed 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/EA, 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 proposed project and, 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 (i.e., the cities of Arvin, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco). KCFD operates 46 full-time fire stations within seven battalions and is equipped with 55 fire engines, four ladder trucks, 41 patrol vehicles, 25 command vehicles, five dozers, two helicopters, two hazardous material response teams, and other ancillary vehicles and equipment. KCFD is staffed with 625 permanent employees, which includes 546 uniformed firefighters (KCFD 2018a).

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 a State Responsibility Area (SRA) land area of nearly 351,276 acres, for 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). Fire Station No. 15 (Rosamond), located at 3219 35th Street West, is approximately 14.5 miles to the southeast of the project site and would be the primary responder to a fire or emergency at the project site. While Fire Station Nos. 12 and 13 are closer to the project site, measured as the crow flies, as shown in **Table 4.14-1**, *List of Nearby Fire Stations*, the actual driving distance of Fire Station No. 15 would be closer to the project site. As such, Fire Station No. 15 was determined to the primary responder. 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. 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*. In remote county areas like the project site, the average response time is approximately 21 minutes (CPSM 2017). As shown in Figure 4.18-2, *Fire Hazard Severity Zones for State Responsibility Areas*, in Section 4.18, *Wildfires*, of

this EIR/EA, the project site is within a SRA area of moderate fire hazard, as determined by the County (KCFD 2009) and CAL FIRE (CAL FIRE 2007/2008).

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 EMS system in Kern County and is responsible for coordinating all system participants in the County, which includes the public, fire departments, ambulance companies, other emergency service providers, hospitals, and Emergency Medical Technician (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 recertification for EMTs, paramedics, specialized nurses, and specialized dispatchers (County of Kern 2018). The closest hospital to the project site is the Adventist Health Tehachapi Valley Hospital, located at 1100 Magellan Drive, Tehachapi, approximately 13.8 miles north of the project site. The next closest hospital to the project site is the Antelope Valley Hospital, located at 1600 West Avenue J, Lancaster, approximately 22.5 miles southeast of the project site.

An inventory of fire facilities in the project area is provided below in Table 4.14-1, *List of Nearby Fire Stations*. The table identifies each type of facility, the name and address of the facility, and the approximate distance from the project site.

**TABLE 4.14-1: LIST OF NEARBY FIRE STATIONS**

| Agency | Facility | Address | Approximate Distance from Project Site |
|---|---|---|---|
| KCFD | Fire Station No. 15 | 3219 35th Street West<br>Rosamond, CA 93560 | 14.5 miles southeast of project site |
| KCFD | Fire Station No. 12 | 800 South Curry Street<br>Tehachapi, CA 93561 | 12.1 miles north of project site |
| KCFD | Fire Station No. 13 | 21415 Reeves Street<br>Tehachapi, CA 93561 | 12.6 miles north of 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 2018a). 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 2018b). The nearest substation that would provide service to the project site is the Rosamond substation located approximately 14.5 miles southeast of the project site, at 3179 35th Street West in the community of Rosamond. This substation provides services to approximately 20,000 residents in the southeastern most end of Kern County, borders the cities of Lancaster and Palmdale in Los Angeles County, and provides shared response with the Boron substation to Edwards Air Force Base (KCSO 2018c). Other substations in proximity to the project site include Tehachapi substation and Mojave substation. Information on the three closest substations to the project site is included in **Table 4.14-2**, *List of Nearby Sheriff Substations*.

The KCSO strives to respond to calls as quickly as possible. Life-threatening calls that involve a danger to someone's personal safety are given priority. Response time is defined as the time required to respond to a call for service, measured from the time a call is received until the time a patrol car arrives at the scene. Average response time for the KCSO is 5 minutes or less for an emergency or immediate-response incident (e.g., a crime that is in progress and/or a life-or-death situation) and 8 to 10 minutes for routine calls (e.g., a crime that has already occurred and/or an incident that is not life-threatening).

Response time to an emergency at or near the project site would vary depending on the level of demand at the substation at the time of the call. If demand is high, the response time would be longer than the average times given above. The response time for a non-emergency call could be 8 minutes or more, depending on staffing and the number of other calls for service.

### *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, Mohave, and Tehachapi near the project area. The OHV Enforcement Team works closely with officers from the Bureau of Land Management, California State Parks, and other local law enforcement agencies (KCSO 2018d).

**TABLE 4.14-2 LIST OF NEARBY SHERIFF'S SUBSTATIONS**

| Agency | Facility | Address | Approximate Distance from Project Site |
|---|---|---|---|
| KCSO | Rosamond Substation | 3179 35th Street West<br>Rosamond, CA 93560 | 14.5 miles southeast of the project site |
| KCSO | Tehachapi Substation | 22209 Old Town Road<br>Tehachapi, CA 93581 | 12.7 miles northwest of the project site |
| KCSO | Mojave Substation | 1771 State Highway 58<br>Mojave, CA 93501 | 17.1 miles northeast of the project site |

### 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 2018a). 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 2018b). The nearest Inland Division office to the project site is located at 1313 Highway 58 in the community of Mojave, approximately 17.7 miles northeast of the 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 proposed 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 Rosamond Branch Library, located approximately 14.6 miles southeast of the project site at 3611 Rosamond Boulevard, Rosamond, and the Mojave Branch Library, located approximately 16.5 miles northeast of the project site at 15555 O Street, Mojave.

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 12.5 miles southeast 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. 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

Under Title 14 of the California Code of Regulations (CCR), CAL FIRE has the primary responsibility for implementing wildfire planning and protection for State Responsibility Areas (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 the SRAs in November 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 important, the burning fire brands that the fire sends ahead of the flaming front. The project site is located within an area of moderate fire hazard and within an SRA (CAL FIRE 2007/2008).

In addition to wildland fires, CAL FIRE's planning efforts involve responding to other types of emergencies, including medical aid, hazardous material spills, swift-water rescues, search and rescue missions, civil disturbances, train wrecks, floods, and earthquakes. Through contracts with local government, CAL FIRE provides emergency services in 36 of California's 58 counties (CAL FIRE 2012).

# Local

## Kern County General Plan

The project site is located within the boundaries of the General Plan. The policies, goals, and implementation measures in the Kern County General Plan for public services applicable to the proposed project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the proposed project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

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

### 1.4 Public Facilities and Services

#### *Policies*

Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

Policy 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 Measure*

Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

### 1.10 General Provisions

#### *Goal*

Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving viable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

### 1.10.1 Public Services and Facilities

#### *Policies*

Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure that it generates and upon which it is dependent.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to ensure the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

### *Chapter 4. Safety Element*

#### 4.6 Wildland and Urban Fire

***Policies***

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 6: All discretionary projects shall comply with the adopted fire code and the requirements of the fire department.

***Implementation Measure***

Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

## Kern County Fire Department Wildland Fire Management Plan

The KCFD Wildland Fire Management Plan 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 eliminated 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 of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The plan also covers 53 special districts that include school, recreation and park, water, community service, and other districts. The plan has been formally adopted by each participating entity and is required to be updated a minimum of every 5 years (KCFD 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 (County of Kern 2017b).

### 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

This section of the EIR/EA qualitatively evaluates the impacts relating to public services for the proposed project. Public service systems were evaluated by reviewing the most current data available from the State and Kern County Department websites, and the County Fire Department Wildland Fire Mitigation Plan.

The methodology used to evaluate potential public services impacts includes the following: (1) evaluation of existing fire and law enforcement services and personnel for the fire and sheriff 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 sheriff station(s) to operate beyond service capacity. The determination of the significance of the proposed project on fire protection and emergency medical and law enforcement 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 the CEQA significance criteria described below. Measures to mitigate (i.e. avoid, minimize, rectify, reduce, eliminate or compensate for) significant impacts accompany each impact discussion.

# Thresholds of Significance

The Kern County California Environmental Quality Act (CEQA) Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in 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 or the need for new or physically altered governmental facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

    i. Fire Protection

    ii. Police Protection

    iii. Schools

    iv. Parks

    v. Other Public Facilities

Kern County, as the Lead Agency, determined in the NOP/IS that the following environmental issue areas would result in no impacts, therefore, they are scoped out of this EIR/EA. Please refer to Appendix A of this EIR/EA 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 not require any permanent onsite staff; only maintenance personnel would visit the site several times per year. There would be a peak workforce of 200 workers during the 6-month construction period; most of these workers are anticipated to live in the region and commute to the project site. Therefore, it is not expected that a substantial temporary increase in population would occur so that the proposed project would adversely affect local school populations, park facilities, or local public facilities, such as post office, courthouse, and library services. Project operation would not require any permanent employees in addition to the existing employees that work at the Manzana Wind facility. 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/EA.

# Project Impacts

**Impact 4.14-1: The project would result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services or police protection and law enforcement services.**

## Fire Protection

### *Construction*

The average and peak number of construction workers to be onsite would be approximately 100 to 200. The presence of construction workers at the project site would be temporary, lasting a maximum of 9 months during the construction period. As determined by the County, the project site is not within an area of high or very high fire hazard (CAL FIRE 2007/2008).

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 proposed 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 could 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 6 to 9 months and would therefore not substantially increase the service demand for fire protection services in Kern County.

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 6- to 9-month construction period 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 may require several additional employees, however they would not be onsite on a permanent basis. The employees would work from the Manzana Wind facility to operate and maintain the proposed project. Employees would visit the project site intermittently 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 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 onsite and implementation of Mitigation Measures MM 4.14-1 and 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

### *Construction*

As described above in Section 4.14.2, *Environmental Setting*, the KCSO provides primary law enforcement services for the project site and surrounding areas. The Rosamond substation, located approximately 14.5 miles southeast of the project site, would provide primary law enforcement protection services to the project site. Similar to fire protection services, the need for law enforcement services would increase during construction of the proposed project.

The project site is located in a relatively remote location surrounded by undeveloped land and rural communities, 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 6-month construction period. The added traffic associated with workers commuting to the project site, haul routes, deliveries, and other project-related traffic would be temporary and thus would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways.

Additionally, chain-link security fencing would be installed around the site perimeter and other areas requiring controlled access during construction. The security fence would be approximately 6 feet tall, topped with 1 foot of barbed wire (three strands) mounted on 45-degree extension arms. Security cameras may also be installed at the site and be monitored at an offsite location. While project construction 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 law enforcement 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 proposed project during construction and impacts to law enforcement services are less than significant.

### *Operation*

Project operation could attract vandals or present other security risks; However, 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. Chain-link security fencing would be installed around the site perimeter and other areas requiring controlled access during construction. Additionally, the project site would be accessed through controlled access gates. Security cameras may also be installed at the site and be monitored at an offsite location. These security features 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 existing operations and maintenance building during normal business hours. Up to three additional staff may be required to operate and maintain the proposed project. Due to the limited number of additional staff, it is unlikely that commutes of workers would increase traffic, and therefore would not substantially affect KCSO response times and/or the CHP's ability to patrol the highways. Accordingly, 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, *Traffic and 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 development impact fees to offset potential impacts on law enforcement services. Impacts would be less than significant.

The project would not 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 sheriff and law enforcement services.

## Schools/Parks/Other Facilities

During construction, construction workers would be temporarily present on the project site. There would be a peak workforce of 200 workers; however, the average daily workforce is expected to be fewer than 200 construction, supervisory, support, and construction management personnel onsite during the 6-month construction period. These construction workers would likely come from an existing local and/or regional construction labor force and would not likely relocate their households as a consequence of working on the proposed project. Therefore, the short-term increased employment of construction workers on the project site would not result in a notable increase in the residential population of the area surrounding the project site. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities. Therefore, project construction workers would not increase demand for local schools, parks, or public facilities such that substantial physical deterioration of such facilities would occur, nor would project construction require the construction or expansion of recreational facilities which might have an adverse effect on the environment, nor result in substantial adverse physical impacts associated with the construction of new or physically altered facilities in order to maintain acceptable service ratios.

During operation, the proposed project could require up to 2 to 3 part-time and/or full time staff at the O&M facility but they would operate out of the Manzana Wind facility. This staff would likely come from an existing local and/or regional labor force and would not likely relocate their households as a consequence of working on the proposed project. Therefore, the increase of onsite staff at the project site would not result in a notable increase in the residential population of the area surrounding the project site. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities, and there would be no impact.

### *Mitigation Measures*

**MM 4.14-1:** Prior to 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 and the Bureau of Land Management (BLM) for review and approval. A copy of the approved Fire Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department and the BLM. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to the following:

1. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.
2. 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.
3. Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees.
4. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.
5. Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats.
6. The project proponent/operator shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.

**MM 4.14-2:** The project proponent/operator shall implement the following mitigation steps at the project site:

1. 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 20 and paid on a yearly basis. Any operations that continues past 20 years will pay the same yearly fee. 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.
2. Written verification of ownership of the project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company with assessed taxes that total less than $1,000 per megawatt per year, then 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.

3. 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, using this address for acquisition, purchasing and billing purposes associated with the proposed project. 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.
4. Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.

### *Level of Significance after Mitigation*

With implementation of Mitigation Measures MM 4.14-1 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 proposed project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural Resources Department, any slight contribution the proposed project would have on the need for additional fire or law enforcement protection services, facilities or personnel required would be appropriately funded. Similar to the 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.

In addition, as discussed above, given that the proposed project would not increase demand for local schools, parks, or public facilities, there would be no impact. Thus, the proposed project would not cumulatively combine with related projects to have an impact on these facilities. Furthermore, cumulative 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 proposed project would not create a significant impact on public services, and the other related projects would also be expected to avoid or mitigate impacts on public services, this project would comply with the goals, policies, and implementation measures of the Kern County General Plan and cumulatively significant impacts are anticipated to be less than significant. Therefore, the proposed project would not create a cumulatively considerable impact related to law enforcement or fire protection services 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 implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2, cumulative impacts would be less than significant.

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Section 4.15
# Traffic and Transportation

## 4.15.1 Introduction

This section of the EIR/EA describes the affected environment, regulatory setting, and project impacts for transportation. It also describes mitigation measures that would reduce these impacts, where applicable. The information and analysis in this section is largely based on the Camino Solar Project Traffic Analysis Memorandum (Omni Means, 2019) located in Appendix K of this EIR/EA.

## 4.15.2 Environmental Setting

The proposed project is located in the southern portion of Kern County, 12 miles south of the City of Tehachapi and 16 miles northwest of the unincorporated community of Rosamond. 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, *Project Vicinity*, of this EIR/EA.

### Regional Setting

#### Major Highways

The project site is located near State Route 14 (SR-14) that would provide access to the general vicinity of the proposed project during the construction and operation phases. SR-14 is a major north-south state route that traverses through Los Angeles County and is used for international, interstate, interregional and intraregional travel, and shipping though an urbanized corridor. In addition, it is used as a commuter route. North of Los Angeles County, SR-14 continues into Kern County serving the communities of Rosamond, Mojave, and Indian Wells, where it merges with US 395 near Inyo County. Within the vicinity of the project site, SR-14 is a four-lane divided freeway with a dirt median, and access is provided at the interchange with Rosamond Boulevard.

**Interstate 5** is a major, four-lane divided freeway that extends north from the Mexican border to the Canadian border and provides access for goods movement, shipping, and travel. This highway crosses the western portion of Kern County and is designated as an arterial/major highway by the Kern County General Plan Circulation Element. The project site is located approximately 29 miles east of I-5.

**State Route 138** is a two-lane highway that runs east-west across the northern part of Los Angeles County, providing regional access from I-5 to SR-14. SR-138 is located approximately 8 miles south of the project site.

**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 is located approximately 9 miles east of 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 near the project site at Rosamond Boulevard and Backus Road.

**State Route 58** is an east-west divided highway that provides regional access to the project site (SR-58 is located approximately 13-miles north of the project site). SR-58 connects San Luis Obispo County and San Bernardino County. In the project vicinity, SR-58 is a four-lane divided freeway with grade-separated interchanges at East Tehachapi Boulevard and SR-14.

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, there are no Designated State Scenic Highways within Kern County (see Section 4.15.3, *Regulatory Setting*, below for more information on the State Scenic Highway Mapping System. The closest Eligible Scenic Highways are SR-14 (portion north of State Route 58 [SR-58]) and SR-58 (portion east of SR-14), both located approximately 20 miles east of the project site (Caltrans, 2017b). 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.

## 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.

The Pacific Crest National Scenic Trail, a walking transportation route, (commonly known as the Pacific Crest Trail or PCT) passes northeast to northwest approximately 1-mile from the western edge of the project boundary.

## Other Transportation Facilities

## 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 most communities. Route 100 provides fixed route scheduled bus service between Bakersfield and Lancaster on SR-58 and SR-14, with stops in the communities of Tehachapi, Keene, Mojave, and Rosamond. Route 250 provides fixed route scheduled bus service between California City and Lancaster on SR-14, with stops in the communities of Mojave and Rosamond. No public transit routes pass or stop near the project site.

## Railways

The closest railway, the Mohave Subdivision, is operated by the Union Pacific Railroad and is located approximately 16 miles east and northeast of the project site.

## Airport Facilities

Skyotee Ranch Airport, a privately owned and operated residential skypark, is located approximately 6.5 miles south of the project site. This airport has a 2,600-foot dirt runway that is currently not in use.

Rosamond Skypark, a privately-owned and operated residential skypark, is located about 14 miles southeast 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.

General William J. Fox Airfield, a public airfield, is located about 18 miles southeast 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.

Mojave Air and Space Port, a public airfield, is located about 18 miles northeast of the project site. This airport has three asphalt runways (with lengths of 3,946 feet, 7,049 feet, and 12,503 feet, respectively) 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 Federal Aviation Administration (FAA).

# Local Setting

## Site Access

The primary access route to the project site is from SR-14 by way of Rosamond Boulevard from the east, and then along 170th Street West and access roads entitled for the Manzana, Pacific Wind, and Catalina projects. Alternatively, vehicles accessing the project site could also use Tehachapi-Willow Springs Road/90th Street West or SR-138 instead of SR-14 to access the project site. Considering these travel routes, this traffic impact analysis evaluates the following nine roadway segments in the vicinity of the project site:

1. 170th Street north of (n/o) Rosamond Boulevard
2. 170th Street south of (s/o) Rosamond Boulevard
3. 90th Street n/o Rosamond Boulevard
4. 90th Street s/o Rosamond Boulevard
5. Rosamond Boulevard 170th Street to 90th Street
6. Rosamond Boulevard 90th Street to 35th Street
7. Rosamond Boulevard 35th Street to SR-14
8. SR-14 n/o Rosamond Boulevard
9. SR-14 s/o Rosamond Boulevard
10. SR-138 west of (w/o) 110th Street
11. SR-138 east of (e/o) 110th Street

The proposed project's gen-tie and Southern California Edison (SCE) infrastructure would be located within or proximate to existing transmission infrastructure and solar facilities. The environmental setting characteristics relating to transportation for the construction, operation, and decommissioning of the gen-tie and SCE infrastructure are substantially similar to the project site.

## Traffic Analysis

As stipulated in the Camino Solar Project Traffic Analysis Memorandum (Omni Means, 2019) located in Appendix K of this EIR/EA, the proposed project's average workforce is expected to consist of approximately 26 construction personnel onsite during the first phase, Site Preparation, and 121 construction personnel during the second phase, Installation. The onsite workforce has been conservatively estimated to peak at approximately 121 individuals during phase two of construction.

For this analysis, trip generation was estimated for each construction phase. Trip generation is based on the types of vehicles used and the number of workers that are anticipated to report to the job site. Additionally, a conservative passenger car equivalent (PCE) of 2.0 was applied to account for large trucks. A PCE is a metric used in transportation engineering to assess traffic flow rate on a highway. A PCE is essentially the impact that a mode of transport has on a given highway variable (e.g., headway, speed, density, etc.) compared to a single passenger car. During the first phase, Site Preparation (approximately 50 days), 26 construction workers are anticipated to commute to the proposed project site. During the second phase, Installation (approximately 150 days), 121 workers are expected to commute to the proposed project site, with approximately 340 daily trips (including PCE factor) forecasted to be generated for short-term construction purposes (GHD, 2019, Appendix K of this EIR/EA).

During the operational phase of the proposed project, it is estimated that day to day operations and maintenance trips and trips related to the battery storage area would be minimal, i.e., 4 to 5 trips per year. Additionally, the solar panel surfaces may be washed seasonally to increase the average optical transmittance of the flat panel surface. Additional staff of two to five people would be required during panel washing and are expected to be hired from the local community. These four to five trips are considered negligible in terms of traffic impact. Other ongoing maintenance and periodic repair are also anticipated to produce negligible results in terms of traffic impact. Based on the above shown anticipated 340 daily trips during construction, the proposed project does not generate significant traffic during any peak hour, even during construction. Based on traffic data provided by Caltrans and Kern County and the Highway Capacity Manual (HCM 6th Edition), SR-14, SR-138 (Avenue D), and the adjacent local roadways of Rosamond Boulevard, Tehachapi Willow Springs Road, 170th Street West, and 90th Street all operate with Levels of Service of A and B.

# 4.15.3 Regulatory Setting

# Federal

## Federal Aviation Administration (FAA)

The FAA regulates aviation at regional, public, and private airports, including the Mojave Air and Space Port, the Mountain Valley Airport, the General William J. Fox Airfield, Rosamond Skypark, and other

regional, public, and private airports. The FAA regulates objects affecting navigable airspace. According to 14 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). Although noted here, the proposed project does not trigger any of these FAA notification requirements.

# State

## California Department of Transportation

The California Department of Transportation (Caltrans) has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. The proposed project is located in the portion of Kern County 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 following Caltrans regulations apply to potential transportation and traffic impacts of the proposed project:

**California Vehicle Code (CVC), Division 15, Chapters 1 through 5 (Size, Weight, and Load).** Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

**California Street and Highway Code, Sections 660-711, 670-695.** Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of State and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

**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

## Kern County Land Division Ordinance and Zoning Ordinance

These County ordinances implement the Kern County Development Standards, which include road standards related to urban and rural planning requirements. These ordinances also regulate access points. The Kern County Planning Department can help developers and property owners in identifying where planned circulation is to occur. All developers must build roads within County rights-of-way to County standards unless improvements along State routes are necessary; in that case, roads shall be built to Caltrans standards.

## Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan Circulation Element for transportation that are applicable to the proposed 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 proposed project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference. The design level of service (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 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 Kern County Planning and Natural Resources Department shall carry out the road network policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. The Kern County Planning and Natural Resources Department can help developers and property owners in identifying where planned circulation is to occur.

### 2.3.4 Future Growth

***Goal***

Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

***Policies***

Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below LOS D. Utilization of the California Environmental Quality Act (CEQA) process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space, and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.

Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along state routes are necessary then roads shall be built to California Department of Transportation (Caltrans) standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.

Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.

Policy 6: The County may accept a developer's road into the County's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.

***Implementation Measure***

Measure A: The County should relate traffic levels to road capacity and development levels. To accomplish this, the Kern County Roads Department and the Kern County Planning and Natural Resources Department should set up a monitoring program. The program would identify traffic volume to capacity ratios and resulting level of service. The geographic base of the program would be traffic zones set up by Kern Council of Governments.

Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

### 2.3.10 Congestion Management Programs

State law requires that urbanized counties prepare an annual congestion management program (CMP). City and county eligibility for new gas tax subventions is contingent upon their participation in the congestion management program. To qualify for funding provided through the State Transportation Improvement Program (STIP) or the Federal Transportation Improvement Program (FTIP), the regional transportation agency must keep current a Regional Transportation Program (RTP) that contains the CMP. Also, the CMP offers local jurisdictions the opportunity to find cooperative solutions to the multi-jurisdictional problems of air pollution and traffic congestion.

The CMP has links with air quality requirements. The California Clean Air Act requires that cities and counties implement transportation control measures (TCMs) to attain, and maintain, the State air quality standard.

***Goals***

Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern Council of Government's Congestion Management Program.

Goal 2: To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.

***Policies***

Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated Kern Council of Governments as the County's Congestion Management Agency (CMA).

Policy 2: The Congestion Management Agency is responsible for developing, adopting, and annually updating a Congestion Management Plan. The Plan is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also Kern Council of Governments), regional transportation providers, local governments, Caltrans, and the air pollution control district.

***Implementation Measures***

Measure A: Kern County Council of Governments should request the proper consultation from County of Kern to develop and update the proper congestion management program.

Measure B: The elements within the Kern Congestion Management Program are to be implemented by each incorporated city and the County of Kern. Specifically, the land use analysis program, including the preparation and adoption of deficiency plans is required. Additionally, the adoption of trip reduction and travel demand strategies are required in the Congestion Management Program.

## Kern Council of Governments Congestion Management Program

All urbanized areas with a population larger than 200,000 residents are required to have a Congestion Management System, program, or process. The Kern Council of Governments (Kern COG) refers to its congestion management activities as the Congestion Management Program (CMP). Kern COG was designated as the Congestion Management Agency.

The CMP provides a systematic process for managing congestion and information regarding (1) transportation system performance, and (2) alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet State and local needs. The purpose of the CMP is to ensure that a balanced transportation system is developed that relates population growth, traffic growth and land use decisions to transportation system level of service (LOS) performance standards and air quality improvement. The program attempts link land use, air quality, transportation, advanced transportation technologies as integral and complementary parts of this region's plans and programs.

The purpose of defining the CMP network is to establish a system of roadways that will be monitored in relation to established LOS standards. At a minimum, all State highways and principal arterials must be designated as part of the Congestion Management System of Highways and Roadways. Kern County has 18 designated State highways.

## Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern COG, and was adopted on August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, State, and federal agencies. Included in the 2018 RTP is the Sustainable Communities Strategy (SCS), which is required by California’s Sustainable Communities and Climate Protection Act, of Senate Bill (SB) 375. The California Air Resources Board (CARB) set Kern greenhouse gas (GHG) emissions reductions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low income housing need and transportation planning. Kern COG engaged in the RHNA process concurrently with the development of the 2014 RTP. This process required Kern COG to work with its member agencies to identify areas within the region that can provide sufficient housing for all economic segments of the population and ensure that the state’s housing goals are met.

The intent of the SCS is to achieve the State's emissions reduction targets for automobiles and light trucks. The SCS will also provide opportunities for a stronger economy, healthier environment, and safer quality of life for community members in Kern County. The RTP/SCS seeks to: improve economic vitality; improve air quality; improve the health of communities; improve transportation and public safety; promote the conservation of natural resources and undeveloped land; increase access to community services; increase regional and local energy independence; and increase opportunities to help shape our community's future.

The 2018 RTP/SCS financial plan identifies how much money is available to support the region's transportation investments. The plan includes a core revenue forecast of existing local, state and federal sources along with funding sources that are considered to be reasonably available over the time horizon of the RTP/SCS. These new sources include adjustments to state and federal gas tax rates based on historical trends and recommendations from two national commissions (National Surface Transportation Policy and Revenue Study Commission and National Surface Transportation Infrastructure Financing Commission), leveraging of local sales tax measures, local transportation impact fees, potential national freight program/freight fees, future state bonding programs and mileage based user fees (Kern COG, 2018a).

### Kern County Airport Land Use Compatibility Plan (ALUCP)

The Kern County ALUCP establishes procedures and criteria to assist Kern County and affected incorporated cities in addressing compatibility issues for the proposed project regarding airports and the land uses around them. The nearest public airports are the Mojave Air and Space Port, located about 18 miles northeast of the project site, and General William J. Fox Airfield, located about 18 miles southeast of the project site. The nearest private airstrip is Skyotee Ranch Airport, located approximately 6.5 miles south of the project site. Due to the project's distance from the nearest airport, the proposed project is not located within any Airport Land Use Compatibility Plan.

## 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 Trip Generation Analysis (Omni Means, 2017) attached as Appendix K of this EIR/EA. Current levels of service (LOS) for area roadways were evaluated based on Kern County roadway segment capacities and LOS thresholds. LOS is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions.

In order to examine existing roadway conditions related to congestion and delay, traffic counts conducted by Caltrans in 2017 for the two segments of SR-14 nearest to the project site (at Rosamond Boulevard) and for the two study segments on SR-138 were reviewed. In addition, traffic counts were conducted in August 2016 along an additional seven roadway segments along 170th Street, 90th Street, and Rosamond Boulevard. Traffic count LOS were estimated using Highway Capacity Manual 2010 (HCM 2010) methodologies. For standard roadways, LOS was estimated using ADT-based LOS thresholds, as presented in **Table 4.15-1**, *Daily Roadway Capacities by Facility Type*.

**TABLE 4.15-1: DAILY ROADWAY CAPACITIES BY FACILITY TYPE**

| | Average Daily Traffic (ADT) – Total of Both Directions | | | | |
|---|---|---|---|---|---|
| **Roadway Type** | **LOS A** | **LOS B** | **LOS C** | **LOS D** | **LOS E** |
| Six-Lane Freeway | 42,000 | 64,800 | 92,400 | 111,600 | 120,000 |
| Four-Lane Freeway | 28,000 | 43,200 | 61,600 | 74,400 | 80,000 |
| Six-Lane Divided Expressway | 35,500 | 42,200 | 46,200 | 55,800 | 60,000 |
| Four-Lane Divided Expressway | 23,667 | 28,133 | 30,800 | 37,200 | 40,000 |
| Four-Lane Divided Arterial | 22,000 | 25,000 | 29,000 | 32,500 | 36,000 |
| Four-Lane Arterial (w/LTL) | 22,000 | 25,000 | 29,000 | 32,500 | 36,000 |
| Four-Lane Arterial (No LTL) | 18,000 | 21,000 | 24,000 | 27,000 | 30,000 |
| Two-Lane Divided Arterial | 11,000 | 12,500 | 14,500 | 16,000 | 18,000 |
| Two-Lane Arterial (w/LTL) | 11,000 | 12,500 | 14,500 | 16,000 | 18,000 |
| Two-Lane Arterial (No LTL) | 9,000 | 10,500 | 12,000 | 13,500 | 15,000 |
| Two-Lane Roundabout Arterial | 14,300 | 16,250 | 18,850 | 20,800 | 23,400 |
| Four-Lane Collector | 12,000 | 15,000 | 18,000 | 21,000 | 24,000 |
| Two-Lane Collector | 6,000 | 7,500 | 9,000 | 10,500 | 12,000 |
| Two-Lane Local | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 |

NOTES:

1. w/LTL indicates arterials with either continuous center left turn lane (LTL) or left turn lanes at major intersections.
2. No LTL indicates arterials without left turn lanes (LTL) at most major intersections.
3. Daily volume to capacity on freeways does not supplant the need to perform peak-hour HCM-based analysis.

SOURCE: Omni Means, 2019.

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. 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.

The majority of construction vehicle trips would be associated with construction employees traveling to and from the project site during peak weekday hours. Project construction is expected to rely mostly on Kern County's skilled labor pool; therefore, the project's construction-related traffic is anticipated to be local in nature. It is assumed that construction staff not drawn from the local labor pool would stay in the local hotels in Rosamond, Mojave, Lancaster, or other local communities, so the workers would not have to travel far or add traffic to roads outside of the vicinity of the project site.

System and materials delivery trips are anticipated to travel to and from the site during both peak and non-peak periods. Heavy equipment used at the site would not be hauled to and from the site daily, but would be brought in at the beginning of construction and taken out upon completion of construction.

The number of construction workers expected to commute to the project site daily would be up to 26 during the first phase, Site Preparation (approximately 50 days), and up to 121 during the second phase, Installation (approximately 150 days). In order to provide a conservative analysis (i.e., the worst-case trip generation scenario), construction workers are assumed to arrive in the AM peak (7:00 AM – 9:00 AM) and leave during the PM peak (4:00 PM – 6:00 PM) each weekday. Although some construction workers may carpool, it is conservatively assumed that each worker would drive alone to/from work.

Following Highway Capacity Manual guidelines, heavy truck volumes were converted to passenger-car equivalent volumes using a factor of 2.0 trips per day to account for the effective reduction in free-flow speed (mean traffic speed under low-flow conditions) caused by the presence of heavy vehicles in the traffic flow. Trips were estimated based on assumptions regarding daily deliveries of materials and equipment anticipated for construction. It was assumed that the trucks would enter the facility through the day, and therefore only a portion of the trucks are shown in the AM and PM peak hours.

The project is expected to "generate" and "attract" construction-related trips throughout the County and from other locations throughout the region. However, the majority of trips would use SR-14 based upon existing traffic flow patterns, geographical location of project site, location of other similar destinations and previous traffic impact studies. These considerations resulted in a distribution of project trips throughout the study area as follows:

- 2 percent to/from 170th Street south of Rosamond Boulevard (via SR-138)
- 3 percent to/from 90th Street south of Rosamond Boulevard (via SR-138)
- 5 percent to/from 90th Street north of Rosamond Boulevard
- 34 percent to/from SR-14 north of Rosamond Boulevard
- 54 percent to/from SR-14 south of Rosamond Boulevard
- 2 percent to/from SR-14 east of Rosamond Boulevard

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 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:

b. Conflict or be inconsistent with CEQA *Guidelines* Section 15064.3, subdivision (b);

c. Substantially increases hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and

d. Result in inadequate emergency access.

As lead agency, Kern County determined in the Notice of Preparation/Initial Study (NOP/IS), attached as Appendix A of this EIR/EA, that the proposed project would not result in significant impacts to some of these environmental issue areas; these issues are thus scoped out of this EIR/EA. The environmental issue areas evaluated in the NOP/IS, which were applicable at the time of NOP/IS publication, are different from those evaluated in this EIR/EA due to recent updates to Appendix G of the CEQA *Guidelines*. It was determined that the proposed project would not:

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 detailed in the NOP/IS, the proposed project is not located in or near the metropolitan Bakersfield area, nor would the proposed project result in an increase in air traffic levels or a change in location of air traffic patterns that would result in substantial safety risks, because air traffic patterns would not be affected (i.e., the only mode of transport affected by the proposed project is automobile/truck operations). Further, the proposed project would not include the development of sharp curves, dangerous intersections, or other hazardous design features. Therefore, the proposed project would not substantially increase hazards due to a design feature or incompatible uses. Additionally, the proposed project would not physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site since the project site and vicinity are accessible via a number of existing roads, with several alternative access roads allowing easy access in the event of an emergency. Therefore, no adverse impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan is anticipated. Due to the rural nature of the project area, bicycle traffic is limited and few bus stops exist on the roadways likely to be used during construction and operation. The proposed project would not house residents or employees and therefore would not have characteristics that could influence alternative means of transportation. The project would not conflict with adopted policies, plans, or programs supporting alternative transportation. No further analysis for these issues areas is warranted in the EIR/EA.

# Project Impacts

### Impact 4.15-1: The project would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

## Construction

Following the methodology described above, approximately 68 daily trips (including PCE factor) are forecasted to be generated for short-term construction purposes by construction workers and haul trucks during the Site Preparation phase. This would include short-term AM and PM peak hour trips of 26, respectively. During the Installation phase, approximately 272 daily trips (including PCE factor) are forecasted to be generated for short-term construction purposes by construction workers and haul trucks, including short-term AM and PM peak hour trips of 122, respectively.

**Table 4.15-2**, *Existing Roadway Segment Level of Service Conditions Plus Project*, provides the results of the LOS analysis of study area roadways. As shown in the table, all study roadway segments are forecasted to operate at Caltrans- or County-defined acceptable LOS C conditions or better under Existing plus Project conditions scenario. Additional detail on the roadway segment analysis is provided in Appendix K. Therefore, construction impacts would be less than significant.

**TABLE 4.15-2 EXISTING ROADWAY SEGMENT LEVEL OF SERVICE CONDITIONS PLUS PROJECT**

| Roadway | Location | Facility Type | Target LOS | ADT plus Project | LOS |
|---|---|---|---|---|---|
| 170th St | n/o Rosamond Blvd | Two-Lane Collector | C | 430 | A |
| 170th St | s/o Rosamond Blvd | Two-Lane Collector | C | 750 | A |
| 90th St | n/o Rosamond Blvd | Two-Lane Collector | C | 2,610 | A |
| 90th St | s/o Rosamond Blvd | Two-Lane Collector | C | 1,200 | A |
| Rosamond Blvd | 170th St to 90th St | Two-Lane Collector | C | 1,100 | A |
| Rosamond Blvd | 90th St to 35th St | Two-Lane Collector | C | 1,440 | A |
| Rosamond Blvd | 35th St to SR-41 | Four-Lane Arterial (w/LTL) | C | 24,960 | B |
| SR-14 | n/o Rosamond Blvd | Four-Lane Freeway | C | 21,020 | A |
| SR-14 | s/o Rosamond Blvd | Four-Lane Freeway | C | 35,790 | B |
| SR-138 | w/o 110th St | Two-Lane Collector | C | 3,170 | A |
| SR-138 | e/o 110th St | Two-Lane Collector | C | 2,760 | A |

NOTES:

1. w/LTL indicates arterials with either continuous center left turn lane (LTL) or left turn lanes at major intersections.
2. Daily volume to capacity on freeways does not supplant the need to perform peak-hour HCM-based analysis.
3. ADT = Average Daily Traffic.

SOURCE: Omni Means, 2019.

## Operation and Maintenance

The proposed project would not include construction of new O&M buildings. The proposed project would share the existing facilities that support the operations of the existing Manzana and/or Pacific Wind Projects. Following construction, it is estimated that day-to-day operations and maintenance trips would be minimal, i.e., four to five trips per day. Project operation is not anticipated to require the closure of any public access roads. Periodically, personnel would visit the site for inspection, security, maintenance, and system monitoring purposes. The project would include maintenance personnel that are expected to visit the project site several times per year for routine maintenance; the PV modules may be cleaned up to nine times per year, but would be cleaned only on an as-needed basis, depending on site events and soiling rates. Assuming that washing and scheduled maintenance operations happen at the same time, it is anticipated that up to 50 personnel may travel to the site in a peak day; therefore, the proposed project would generate minimal operational traffic. 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. Because these activities would not generate trips on a regular basis, the estimated trips would be substantially lower than the trips generated by project construction, and as stated above, the proposed project impact during construction would be less than significant. As such, project operation would have a less than significant impact on area roadways.

## Decommissioning

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.

## Mitigation Measures

Although the proposed project would not conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, implementation the following mitigation measure would ensure that temporary, construction-related delays to all roadway users would be minimized, thereby lessening the already less than significant impact.

**MM 4.15-1:** Prior to the issuance of construction or building permits, the project proponent/operator shall:

1. Prior to issuance of construction permits, 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:

a. Timing of deliveries of heavy equipment and building materials;

b. Directing construction traffic with a flag person;

c. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;

d. Ensuring access for emergency vehicles to the project sites;

e. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;

f. Maintaining access to adjacent property; and,

g. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible.

2. Obtain all necessary encroachment permits for the work within the road right-of-way or use of oversized/overweight vehicles that will utilize county maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the Kern County Planning and Natural Resources Department, the Kern County Public Works Department-Development Review, and the California Department of Transportation.

3. 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.
4. 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.
5. 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 MM 4.15-1, impacts would be less than significant.

### Impact 4.15-2: The project would conflict 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 measures are required.

## Level of Significance

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 previously discussed, with the addition of project construction- and operational-generated trips, area roadways near the proposed project would continue to operate at an acceptable LOS according to Caltrans and the County's performance criteria. As such, the proposed project would not result in any individual transportation impacts during construction or operation of the PV solar facilities. 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 impacts from the proposed project, when considered with nearby, reasonably foreseeable planned projects, would occur only during project construction because project operation traffic would be very minimal. As stated above in the evaluation of operational impacts, there would be minimal trip generation once construction activities have concluded. Therefore, operation of the proposed project would result in less than significant cumulative impacts

As described in Chapter 3, *Project Description*, 17 projects are proposed within the project vicinity. In addition, future residential development nearby would also increase the overall number of vehicle trips within the County. For the analysis of cumulative traffic conditions, it is necessary to determine approved/pending projects that could potentially generate construction traffic in the vicinity of the project during the same time frame as construction of the proposed project. Of the 17 projects listed, nine are located within a 6-mile radius of the project site, which is the radius in which traffic generated by other projects is assumed to potentially contribute to traffic volumes on study area roadways. Of those nine projects, only one project was listed in the Kern County Planning and Natural Resources Department website with a published environmental document, named as Rosamond Solar Array Project by Rosamond Solar LLC. Therefore, this project was included in the cumulative analysis because the proposed project could reasonably contribute construction traffic volumes to the study area roadways during construction. The remaining eight projects listed were not included in the cumulative analysis, as these projects have not progressed to the point of being considered pending or approved.

According to the Rosamond Solar Array Project Traffic Impact Analysis report executive summary, construction related activity associated with the proposed project is forecast to generate approximately 964 daily trips, which include approximately 450 AM and 450 PM peak hour trips. The primary route to access the site is Rosamond Boulevard. Likewise, the Camino Solar Project would also travel along Rosemond Boulevard as the main roadway access to the site. Therefore, for the purposes of the cumulative traffic analysis, the construction vehicle trips for the Rosamond Solar Array Project were distributed to the roadway network consistent with the Camino Solar project trip distribution, which was based upon existing traffic flow patterns and geographical location of project site.

The results of the cumulative traffic analysis, which includes construction traffic generated by the proposed project and construction traffic generated by the Rosamond Solar Array Project, are shown in **Table 4.15-3**, *Cumulative Plus Project Roadway Segment Level of Service*. As shown in the table, all roadway segments are forecasted to operate at acceptable LOS C conditions or better under Cumulative plus Project conditions. Therefore, cumulative construction impacts to study area roadway segments would be less than significant. Additional detail on the roadway segment analysis is provided in Appendix K.

**TABLE 4.15-3: CUMULATIVE PLUS PROJECT ROADWAY SEGMENT LEVEL OF SERVICE**

| Roadway | Location | Facility Type | Target LOS | ADT plus Project | LOS |
|---|---|---|---|---|---|
| 170th St | n/o Rosamond Blvd | Two-Lane Collector | C | 430 | A |
| 170th St | s/o Rosamond Blvd | Two-Lane Collector | C | 770 | A |
| 90th St | n/o Rosamond Blvd | Two-Lane Collector | C | 2,610 | A |
| 90th St | s/o Rosamond Blvd | Two-Lane Collector | C | 1,200 | A |
| Rosamond Blvd | 170th St to 90th St | Two-Lane Collector | C | 2,050 | A |
| Rosamond Blvd | 90th St to 35th St | Two-Lane Collector | C | 2,310 | A |
| Rosamond Blvd | 35th St to SR-41 | Four-Lane Arterial (w/LTL) | C | 25,830 | C |
| SR-14 | n/o Rosamond Blvd | Four-Lane Freeway | C | 21,380 | A |
| SR-14 | s/o Rosamond Blvd | Four-Lane Freeway | C | 36,310 | B |
| SR-138 | w/o 110th Street | Two-Lane Collector | C | 3,170 | A |
| SR-138 | e/o 110th Street | Two Lane Collector | C | 2,760 | A |

NOTES:
1. w/LTL indicates arterials with either continuous center left turn lane (LTL) or left turn lanes at major intersections.
2. Daily volume to capacity on freeways does not supplant the need to perform peak-hour HCM-based analysis.
3. ADT = Average Daily Traffic.
SOURCE: Omni Means, 2019.

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. Moreover, 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.

## Cumulative 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, cumulative impacts would be less than significant.

Section 4.16
# Tribal Cultural Resources

## 4.16.1 Introduction

This section of the EIR/EA describes the affected environment and regulatory setting pertaining to tribal cultural resources. In addition, this section provides an assessment of potential impacts related to tribal cultural resources that could result from implementation of the proposed project. The analysis in this section is based on the results of the Native American consultation conducted by the County for purposes of compliance with CEQA requirements prompted by Assembly Bill 52 (AB 52), located in Appendix L of this EIR/EA.

## 4.16.2 Environmental Setting

### Paleoenvironment

As glaciers in the western United States began to retreat between 12,000 and 10,000 years ago, the climate became dramatically warmer and drier, and vegetation communities such as piñon-juniper woodlands, along with the animals that relied on them, began to inhabit higher elevations (Price et al. 2008). During the late Pleistocene, fossil evidence suggests that the western Mojave was inhabited by numerous large mammalian species, including sloth, horse, bear, mammoth, bison, camel, and prong-horned antelope. Large carnivorous species included saber-toothed cats, wolves, mountain lions, desert coyotes and foxes, while smaller animals included rodent, 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 (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 distinct technologies, artifact types, economic systems, trade and 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 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. 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) (SWCA, 2017).

## Lake Mojave Complex (8000–6000 B.C.)

In terms of material culture, the Lake Mojave Complex is typified by stone tools such as stemmed Lake Mojave and Silver Lake projectile points, bifaces, steep-edged unifaces, crescents, and some ground stone implements (SWCA, 2017). 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 (6000–3000 B.C.)

Archaeological deposits ascribed to 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 resources associated with streams or other water sources. 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 includes roughly formed projectile points, “heavy-keeled” scrapers, choppers, and a greater prevalence of flat millingstones and manos, indicating more intensive use and processing of plant resources (SWCA, 2017). 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 (SWCA, 2017).

## Gypsum Complex (c. 2000 B.C.–A.D. 200)

Many archaeological sites of this period are small and surficial, probably indicative of temporary occupation. It is during this time, however, that more archaeological evidence suggestive of inter-tribal trade appears, particularly between the desert and the coast. At 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 (SWCA, 2017). 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 Complex include Humboldt Concave Base, Gypsum Cave, Elko Eared, and Elko Corner-notched projectile points (SWCA, 2017).

## Rose Springs Complex (c. A.D. 200–1200)

The general cultural pattern for this period is a continuation of that of the preceding Gypsum Complex. 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 (SWCA, 2017). In addition, the archaeological record attests to established trade routes between desert and coastal populations, evidenced by shell beads and steatite, as well as an introduction of Anasazi influence

from the eastern Great Plains as seen in 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 (SWCA, 2017). 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, approximately 70 miles north of Mojave, was imported in near-finished form for use in making lithic tools (SWCA, 2017). 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 (SWCA, 2017).

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 (SWCA, 2017). A number of sites have been identified along the shores of Koehn Lake, including one site that retains evidence of a pit-house (SWCA, 2017).

### The Late Prehistoric Period (A.D. 1200–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. 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 (SWCA, 2017).

## 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 (SWCA, 2017). 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 (SWCA, 2017). Finally, during the historic period, there is some evidence for the occupation of the Western Mojave by the Chemehuevi. The Kitanemuk and Kawaiisu, the two groups that are known to have lived in the vicinity of the project area, are described in more detail below.

## Kawaiisu

The Kawaiisu may be divided into two groups: The Mountain Kawaiisu and the Desert Kawaiisu (SWCA, 2017). The Kawaiisu territory encompassed the southern Sierra Nevada south of the Kern River and into the northern Tehachapi Mountains south of the Tehachapi pass (SWCA, 2017). 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 (SWCA, 2017).

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 culture, although complex basketry appeared to be a defining feature (SWCA, 2017). 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 (SWCA, 2017). 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 (SWCA, 2017).

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 parts of San Bernardino County, south of the project. The traditional territory for the Serrano centered in the San Bernardino Mountains and extended northeast into parts of the Mojave River area and southeast to the Tejon Creek area. Their lands were south of the traditional Kawaiisu lands and north of lands inhabited by the Cahuilla. Traditionally, the Serrano people were hunter-gatherers who used resources in the Apple and Lucerne Valleys in the winter and in the Big Bear Lake area in the summer. Both acorns and piñon nuts featured as staple foods in their diet, as did small game that could be obtained using traps and bow-and-arrow technology (from SWCA, 2017).

The Serrano language is part of the Serrano division of a branch of the Takic family of the Uto-Aztecan linguistic stock. The Serrano language is one of the two Serrano languages, Kitanemuk and Serrano, which are closely related. Kitanemuk lands were northwest of Serrano lands. The Serrano language was originally spoken by a relatively small group located within the San Bernardino and Sierra Madre Mountains, and the term Serranohas come to be ethnically defined as the name of the people in the San Bernardino Mountains.

The Vanyume, who lived along the Mojave River and associated Mojave Desert areas and are also referred to as the Desert Serrano, spoke either a dialect of Serrano or a closely related language (from SWCA, 2017).

# 4.16.3 Regulatory Setting

## Federal

### Section 106 of the National Historic Preservation Act

Archaeological resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470f), and its implementing regulation, Protection of Historic Properties (36 CFR Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Officer a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the NRHP. As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the NRHP. Under the NHPA, a resource is considered significant if it meets the NRHP listing criteria at 36 CFR 60.4.

### National Register of Historic Places

The NRHP was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (Code of Federal Regulations [CFR] 36 Section 60.2). The NRHP recognizes both historical-period and prehistoric properties, including archaeological sites, that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior, 1995):

a. Are associated with events that have made a significant contribution to the broad patterns of our history;
b. Are associated with the lives of persons significant in our past;
c. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for NRHP listing (U.S. Department of the Interior, 1995).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior 1995). The NRHP

recognizes seven qualities that, in various combinations, define integrity. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

## Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

## Paleontological Resources Preservation Act

This act aims to manage and protect paleontological resources on federal land, using scientific principles and expertise, and to develop plans for inventorying, monitoring, and deriving the scientific and educational use of such resources.

## West Mojave Plan

The project site falls within the area covered by the Bureau of Land Management (BLM) West Mojave Plan (WMP), whose conservation program is intended to apply to both public and private lands but was never adopted or completed for private land. The WMP adopted on BLM public land is an attempt to define a regional strategy for conserving 58 plants and animals. In addition, the WMP an amendment to the California Desert Conservation Area (CDCA) Plan, which recognizes the importance of paleontological, prehistoric, and historic resources and places of cultural and religious value to Native Americans. The WMP's goals related to cultural resources include the following:

- Conduct an inventory of cultural resources to the fullest extent possible to expand knowledge of these resources
- Protect and preserve to the greatest extent possible representative samples of these resources
- Give full consideration to these resources during land use planning and management decisions
- Manage to maintain and enhance resource values
- Ensure that BLM's activities avoid inadvertent damage to cultural resources
- Achieve proper data recovery where adverse impacts cannot be avoided

The CDCA Plan also states that Native American values will be considered in all CDCA land use and management decisions. The WMP has not been adopted for privately owned lands; however, the proposed project would be consistent with these goals even though they do not apply to the proposed project.

# State

## Assembly Bill (AB) 52 and Related Public Resources Code Sections

AB 52 was approved by California State Governor Edmund Gerry "Jerry" Brown, Jr. on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation 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 proposed 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.

## California Register of Historical Resources (CRHR)

Under the California PRC, Section 5024.19(a), the CRHR was created in 1992 and implemented in 1998, the California Register is "an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State's historical and tribal resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Certain properties, including those listed in, or formally determined eligible for listing in, the National Register and California Historical Landmarks numbered 770 and higher, are automatically included in the California Register. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the California Register. A resource, either an individual property or a contributor to a historic district, may be listed in the California Register if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on National Register criteria:

> **Criterion 1**. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
>
> **Criterion 2**. It is associated with the lives of persons important in our past.
>
> **Criterion 3**. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
>
> **Criterion 4**. It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC 5024.1, Title 14 California Code of Regulations [CCR], Section 4852(c), a cultural or tribal resource must retain integrity to be considered eligible for the California Register. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as farming, often lack integrity because they have been directly damaged or moved from their original location, among other changes.

Typically, an archaeological site in California is recommended eligible for listing in the California Register based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions. However, archaeological sites may also be recommended eligible under CRHR Criteria 1, 2, and/or 3.

## 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 proposed project on those resources shall not be considered a significant effect on the environment (CEQA *Guidelines* Section 15064.5(c)(4)).

## Native American Heritage Commission

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.

## California Public Records Act

Sections 6254(r) and 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public related to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency".

## California Native American Graves Protection and Repatriation Act of 2001

Codified in the California Health and Safety Code Sections 8010–8030, the California Native American Graves Protection and Repatriation Act (Cal NAGPRA) is consistent with the federal NAGPRA. Intended to "provide a seamless and consistent state policy to ensure that all California Indian human remains and cultural items be treated with dignity and respect," Cal NAGPRA also encourages and provides a mechanism for the return of remains and cultural items to lineal descendants. Section 8025 established a Repatriation Oversight Commission to oversee this process. The Cal NAGPRA also provides a process for non-federally recognized tribes to file claims with agencies and museums for repatriation of human remains and cultural items.

## California Health and Safety Code, Sections 7050 and 7052

Health and Safety Code, Section 7050.5, declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

## California Penal Code, Section 622.5

California Penal Code, Section 622.5, provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

## Public Resources Code, Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

# Local

## Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for tribal cultural resources applicable to the proposed project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the proposed project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

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

#### 1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

***Policy***

Policy 25: The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

***Implementation Measures***

Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

# 4.16.4 Impacts and Mitigation Measures

## Methodology

The proposed project's potential impacts on tribal cultural resources have been evaluated using a variety of sources, including previous cultural resources studies for the Manzana Wind Facility and the Tylerhorse Wind Energy Project. Studies for these projects surrounding the current project site included Sacred Lands File (SLF) searches and yielded negative results for Native American sacred sites (SWCA 2017). 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.

## Native American Correspondence and AB 52 Consultation

As indicated in the cultural resources study for the proposed project (SWCA, 2017), a SLF search through the Native American Heritage Commission (NAHC) was not conducted. However, previous cultural resource studies of areas surrounding the current project site (for the Manzana Wind Power Project and the Tylerhorse Wind Energy Project) included SLF searches which yielded negative results for Native American sacred sites (SWCA, 2017). As part of the County's government-to-government responsibilities pursuant to AB 52, on May 4, 2017, the County sent consultation notification letters via certified mail to California Native American tribes on the County's Master List for AB 52 consultation. Contacted tribes included two separate contacts for the San Manuel Band of Mission Indians, as well as the Torres Martinez Desert Cahuilla Indians, and the Twenty-Nine Palms Band of Mission Indians, both subdivisions of the Serrano.

To date, the County has received three responses, two from the San Manuel Band of Mission Indians and one from the Twenty-Nine Palms Band of Mission Indians. By email dated May 31, 2017, Jessica Mauk, Cultural Resources Analyst with the San Manuel Band of Mission Indians, indicated that the proposed project is located just outside Serrano ancestral territory and that the tribe will not be requesting consulting party status under AB 52. Similarly, by email dated June 2, 2017, Diane Versaggi, acting on behalf of Lee Clauss, Cultural Resources Management Director for the San Manuel Band of Mission Indians, stated that the proposed project is not located within San Manuel's ancestral territory, and that the tribe will not be requesting consulting party status under AB 52. Finally, by letter dated May 22, 2017, Anthony Madrigal, Jr., Tribal Historic Preservation Officer (THPO) for Twenty-Nine Palms Band of Mission Indians, stated that the THPO is not aware of any archaeological/cultural sites or properties in the project area that pertain to the tribe, and that the tribe currently has no interest in the proposed project and defers to the comments of other affiliated tribes. However, the email did state that if there are inadvertent discoveries of archaeological remains or resources, construction should stop immediately and the appropriate agency and tribe(s) should be notified. As a result of the County's outreach to appropriate Native American tribes pursuant to AB 52, no tribal cultural resources were identified within the project area.

**Table 4.16-1**, *Summary of AB 52 Consultation Efforts*, summarizes the County's consultation efforts to date, which includes the receipt of two responses. The responses received from San Manuel and Twenty-Nine Palms did not request government-to-government consultation pursuant to AB 52.

**TABLE 4.16-1: SUMMARY OF AB 52 CONSULTATION EFFORTS**

| Tribe/ Organization | Date Letter Mailed | Response Received |
|---|---|---|
| Torres Martinez Desert Cahuilla Indians | May 4, 2017 | No response. |
| Twenty-Nine Palms Band of Mission Indians, A.M. | May 4, 2017 | Twenty-Nine Palms responded via a letter dated May 11, 2017 stating the Tribal Historic Preservation Office is not aware of any archeological/cultural sites or properties in the project area that pertain to the Twenty-Nine Palms Band of Mission Indians. |
| Twenty-Nine Palms Band of Mission Indians, D.M. | May 4, 2017 | No response. |
| San Manuel Band of Mission Indians | May 4, 2017 | San Manuel responded via an email dated June 2, 2017 stating the project is not located within San Manuel's ancestral territory. |

# 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).**

Previous cultural resources studies for the Manzana Wind Facility and the Tylerhorse Wind Energy Project, which surround the current project site and included SLF searches, did not indicate the presence of tribal cultural resources within or immediately adjacent to the project site. Additionally, the County's government-to-government consultation efforts with interested Native American groups conducted pursuant to AB 52 did not result in the identification of tribal cultural resources within the project site.

While no tribal cultural resources were identified within the project site, ground-disturbing activities associated with the proposed project have the potential to encounter undocumented subsurface tribal cultural resources that could qualify as tribal resources. However, the cultural resources assessment (SWCA, 2017) notes that ground surface visibility was excellent throughout the project area. Thus, it is reasonable to assume that few resources were overlooked. In the unlikely event that unknown tribal cultural resources are discovered during project construction, significant impacts to these resources could occur. Mitigation Measures MM 4.5-1 and MM 4.5-2 would require cultural resources sensitivity training for construction workers and appropriate treatment of unearthed resources during construction. With implementation of these mitigation measures, impacts to tribal cultural resources would be less than significant.

## Mitigation Measures

Implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2 would be required.

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 and MM 4.5-2, impacts would be less than significant.

**Impact 4.16-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

As noted above, no tribal cultural resources were identified through the SLF search conducted by the NAHC, nor as part of the County's government-to-government notification and consultation efforts with interested Native American groups conducted pursuant to AB 52. Given that no tribal cultural resources

have been identified within or immediately adjacent to the project site, the proposed 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 measures 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 proposed project discussed in Chapter 3, *Project Description*, of this EIR/EA, 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 proposed project on tribal cultural resources that may combine with similar effects caused by other projects, and provides a reasonable context wherein cumulative actions could 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 proposed project to tribal cultural resources, in combination with other projects in the area, could contribute to a cumulatively significant impact due to the overall loss of resources unique to the region. However, as discussed above, no tribal cultural resources have been identified in the project area and the project will not have an impact on tribal cultural resources. Therefore, the proposed project would not have a cumulatively considerable contribution to impacts to tribal cultural resources.

## Mitigation Measures

No mitigation measures would be required.

## Level of Significance

There would be no cumulative impact.

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Section 4.17
# Utilities and Service Systems

## 4.17.1 Introduction

This section of the EIR/EA describes the affected environment and regulatory setting of the proposed project pertaining to demand for operational utilities (water supply, stormwater control, solid waste disposal, electricity, natural gas, and telecommunications). This section describes existing infrastructure and levels of service and evaluates whether any improvements would be necessary to accommodate the proposed project. The information and analysis in this section is based on the project-specific *Water Demand Memo* (Appendix I-2 Aztec, 2016a), *Water Supply Assessment* (Appendix I-3 AECOM, 2019) and *Preliminary Drainage Report* (Aztec, 2016b) included in Appendix I-1 of this EIR/EA.

## 4.17.2 Environmental Setting

### Water Supply

There are typically three sources of supply water for development: (1) natural sources; (2) manmade sources; and (3) reclamation. Natural sources include rivers, lakes, streams, and groundwater stored in aquifers. Manmade sources include runoff water that is treated and stored in reservoirs and other catchment structures. Reclaimed water is wastewater that has been conveyed to a treatment plant and then treated to a sufficient degree that it may again be used for certain uses, such as irrigation. However, reclaimed water is not potable (drinkable) and must be conveyed in a separate system in order to ensure that there is no possibility of direct human consumption.

The project site is located in an unincorporated part of Kern County within the boundaries of the Antelope Valley-East Kern Water Agency (AVEK). AVEK is a wholesaler of State Water Project (SWP) supplies to potable water purveyors 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. Public water systems are required by the California Water Code to prepare Urban Water Management Plans (UWMPs) to carry out "long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water" (Water Code Section 10610.2). Information from UWMPs describing water supply in the Antelope Valley Region was incorporated the Water Supply Assessment prepared for the proposed project (AECOM 2019). Assessments that provide information relevant to water supply for the proposed project included UWMPs for the City of Tehachapi, Rosamond CSD, California City, and AVEK (AECOM 2019). These UWMPs are informed by the 2013 Antelope Valley Integrated Regional Water Management Plan (IRWMP).

The project site is primarily undeveloped with unimproved gravel roads. Structures associated with the Manzana Wind Power Project (Manzana Project) are located to the south of the project site, and include an operations and maintenance (O&M) building, water storage tank, aboveground propane tanks, electrical transformers, and storage containers, and power generating wind turbines (HDR Engineering, 2017). There

is no current water demand associated with the project site. There is negligible water demand limited to minor O&M at the Manzana Wind Project site to the south (Aztec, 2016a).

## Groundwater Supply

The project site is located within the Antelope Valley Groundwater Basin (Basin). 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 (AVIRWMP, 2013). For a discussion of Basin characteristics, please refer to Section 4.10, *Hydrology and Water Quality,* of this EIR/EA. The projected groundwater resource supplies would be pumped from the Oak Creek and Neenach subbasins of the Basin, located within the adjudicated jurisdictional boundary. Customers of AVEK have pre-rampdown overlying groundwater production rights of 38,000 AFY. After the 7-year rampdown, the production rights for AVEK customers will be 19,300 AFY, a decrease of 18,700 AFY in production rights (AECOM, 2019). The production rights decrease is based on the Judgment, with each AVEK customer subject to production rights management by the court-appointed Watermaster. Groundwater resource pumping and supply water from AVEK could be affected by the future rampdown schedule outlined in the Judgment and subject to management by the Watermaster (AECOM 2019).

## Groundwater Basin Adjudication

Prior to the 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. A groundwater rights adjudication process is underway for the area managed by the Antelope Valley Integrated Regional Water Management Plan (IRWMP) area, which includes the project site. The parties to the adjudication include non-governmental overlying users, appropriative users, non-user overlying land owners, and federally reserved water rights. The case will define who owns, controls, and uses the water in the basin (AVT, 2015).

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 Basin of 110,000 acre-feet per year (AFY), although pumping in the area has ranged up to 150,000 AFY.

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 Watermaster to oversee continuing implementation of the Judgment and directed the appointment by the Watermaster of a Water Engineer, defining their 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.

## Wastewater

The Kern Sanitation Authority (KSA) provides maintenance and wastewater service for Kern County. As the project site is currently undeveloped, there are no septic systems or infrastructure within the project site boundary. The project is located in an area with no wastewater treatment provider. Well water used onsite is not anticipated to require treatment for construction and operational uses. The O&M building for the Manzana Project would be available for personnel who provide routine maintenance and PV cleaning.

## Stormwater Drainage

The project site is located within the Antelope-Willow Springs Watershed at the base of the Tehachapi Mountains on an alluvial fan. Streams in the mountain/foothill area are generally well-defined and are typically ephemeral. These streams become less defined as they enter the desert floor and drain into existing playas. Most drainage flow originating in the vicinity infiltrates into the soil. Downstream of the project area, during major storm events, overland flow is anticipated to continue in a generally south to southeasterly direction. During prolonged extreme storm events, water flows may reach Rosamond Lake. Typical of alluvial fan regions, the project site has well-defined drainage channels and much of the site's stormwater runoff is sheet flow. There are four drainage features that have been identified on the project site that are ephemeral streams that convey water intermittently during storm events. There is no active flowing water on the site. Overall, because the project site is undeveloped desert with little to no vegetative cover and has few well-defined drainage channels, existing drainage onsite generally follows the contours of the land, with stormwater flows occurring as sheetflow from north to south. (Aztec, 2016b). Drainage characteristics are further described in Section 4.10, *Hydrology and Water Quality*, of this EIR/EA.

## Solid Waste

Solid waste generally refers to garbage, refuse, sludge, and other discarded solid materials that come from residential, industrial, and commercial activities. Construction, demolition, and inert wastes are also classified as solid waste. Such wastes include nonhazardous building materials such as asphalt, concrete, brick, drywall, fencing, metal, packing materials, pallets, pipe, and wood. The general waste classifications used for California waste management units, facilities, and disposal sites are outlined below. Nonhazardous solid waste consists of organic and nonorganic solid, semi-solid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semi-solid wastes, and other discarded waste, provided that such wastes do not contain hazardous materials or

soluble pollutants in concentrations that would exceed applicable water quality objectives or cause a degradation of waters of the State.

California State law regulates the types of waste that can be disposed of at the different classes of landfills. Class I landfills may accept hazardous and nonhazardous wastes. Class II landfills may accept designated and nonhazardous wastes, and Class III landfills may accept nonhazardous wastes.

Kern County is responsible for meeting the California Integrated Waste Management Act of 1989 (AB 939). AB 939 required cities and counties to reduce the amount of solid waste being sent to landfills by 50 percent by January 1, 2000. It also required cities and counties to prepare solid waste planning documents. These documents include the Source Reduction and Recycling Element (SRRE), the Hazardous Waste Element (HHWE), and the Nondisposal Facility Element (NDFE). All three of these documents, as well as the Integrated Waste Management Plan, approved February 1998 by the California Integrated Waste Management Board, have been approved for Kern County. The Kern County Integrated Waste Management Plan is the long-range planning document for landfill facilities.

Construction and demolition (C&D) waste is heavy, inert material. This material creates significant problems when disposed of in landfills. Because C&D waste is heavier than paper and plastic, it is more difficult for counties and cities to reduce the tonnage of disposed waste. For this reason, C&D waste has been specifically targeted by the State of California for diversion from the waste stream. Projects that generate C&D waste should emphasize deconstruction and diversion planning rather than demolition. Deconstruction is the planned, organized dismantling of a prior construction project, which allows maximum use of the deconstructed materials for recycling in other construction projects and sends a minimum amount of the deconstruction material to landfills.

Approved on October 6, 2011, AB 341 intended to promote recycling and diversion of solid waste from landfills by requiring businesses to accomplish recycling activities and/or participate in recycling programs. The Waste Management Division of Kern County Public Works administers or sponsors the following recycling programs, which contribute toward meeting State-mandated solid waste diversion goals:

Recycling programs at landfills to recycle or divert a wide variety of products, such as wood waste, cathode ray tubes, tires, inert materials, appliances, etc.

Drop-off recycling centers for household recyclables. The County- and the City-operated drop-off recycling centers, which are located in the unincorporated metropolitan area and the city, may be used by both county and city residents.

Financial assistance for operation of the City of Bakersfield Green Waste Facility.

The Kern County Special Waste Facility for the disposal of household hazardous waste. Services are provided to all Kern County residents.

Semi-annual “bulky waste” collection events, which are held in the Bakersfield area and available to both county and city residents (co-sponsor).

Christmas tree recycling campaign (participates jointly with the City of Bakersfield).

Telephone book recycling program (co-sponsors with Community Clean Sweep).

Community Clean Sweep summer workshops called “Trash to Treasure,” which educate children about recycling and other Waste Management Division of Kern County Public Works programs (sponsor).

An innovative elementary school program called the "Clean Kids Hit the Road Puppet Show" (operates in collaboration with Community Clean Sweep).

Recycling trailers for churches, schools, and nonprofit organizations.

## Landfills

The Kern County Public Works Department operates seven landfills throughout the County. Landfills are located in Bakersfield, Boron, Mojave-Rosamond, Ridgecrest, Shafter-Wasco, Taft, and Tehachapi (Kern County Waste Management, 2019a). No solid waste is currently generated at the project site. The project would likely be served primarily by the Mojave-Rosamond Landfill, located at 400 Silver Queen Road, in the community of Mojave, approximately 17 miles northeast of the project site. This Class III landfill accepts clean inerts (e.g., source separated asphalt, brick and concrete); C&D waste (e.g., asphalt, brick, concrete, dirt, and metal); dead animals; electronic waste; greenwaste; ordinary household trash; tires; treated wood waste (e.g., grape stakes, utility poles; foundation lumber); and used motor oil. The landfill does not accept hazardous waste, hot ashes, liquids of any kind, and non-friable asbestos (Kern County Waste Management, 2019b). As of 2019, approximately 76,310,297 cubic yards (97.8 percent of the total 78,000,000 cubic yard capacity) remained. The permitted maximum daily disposal is 3,000 tons per day (CalRecycle, 2019a).

The other nearby landfill is the Tehachapi Sanitary Landfill, a Class III landfill which is located approximately 13 miles north of the project site at 12001 East Tehachapi Boulevard, in the City of Tehachapi, over the Tehachapi Mountains. Landfill locations, capacity, and 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 | Distance from Project Site | Maximum Permitted Capacity | Remaining Capacity (cubic yards) | Maximum Permitted Throughput (tons/day) | Anticipated Year of Closure |
|---|---|---|---|---|---|
| Mojave-Rosamond<br>400 Silver Queen Rd., Mojave | 17 miles (northeast) | 78,000,000 | 76,310,297 | 3,000 | 2123 |
| Tehachapi<br>12001 E. Tehachapi Blvd., Tehachapi | 13 miles (north) | 4,000,000 | 522,298 | 1,000 | 2020 |
| 11400 Boron Ave, Boron | 40 miles (east) | 1,057,000 | 191,380 | 200 | 2048 |

SOURCE: CalRecycle, 2019a; CalRecycle, 2019b.

# Electricity, Natural Gas, and Telecommunications

No electricity, natural gas, nor telecommunication facilities are currently located on the project site. Southern California Edison (SCE) and the California Independent System Operator (CAISO) have existing facilities in the project area, including the Manzana Project substation, SCE Whirlwind Substation, and SCE transmission line. There are no natural gas pipelines or telecommunication facilities on the project site. The Southern California Gas Company (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) regulates the provision of natural gas and electricity within California and 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 develops laws and regulations to control and manage waste, for which enforcement authority is typically delegated to the local government, and administers and provides oversight for all of California' State-managed non-hazardous waste handling and recycling program. CalRecycle provides training and ongoing support for local enforcement agencies that regulate and inspect California's active and closed solid waste landfills.

The Integrated Waste Management Act of 1989 (Public Resources Code [PRC] 40050 et seq. or Assembly Bill ([AB] 939, codified in PRC 40000), administered by CalRecycle, requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by the year 1995 and 50 percent by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

## 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.

The National Pollutant Discharge Elimination System (NPDES) permit program was established per 1972 amendments to the Federal Water Pollution Control Act, or Clean Water Act (CWA), for the purpose of controlling discharges of pollutants from point sources (Section 402) into waters of the United States. Amendments to the CWA created a new section to the Act, which is devoted to stormwater permitting (Section 402[p]), with individual states designated for administration and enforcement of the provisions of the CWA and the NPDES permit program. The SWRCB issues both general construction permits and individual permits under this program.

## California Department of Water Resources

The California Department of Water Resources (DWR) is responsible for protecting, conserving, developing, and managing much of California's water supply. These duties include: preventing and responding to floods, droughts, and catastrophic events; informing and educating the public on water issues; developing scientific solutions; restoring habitats; planning for future water needs, climate change impacts, and flood protection; constructing and maintaining facilities; generating power; ensuring public safety; and providing recreational opportunities.

## California Water Code 10912

Section 10912 of the Water Code requires a city or county that determines that a project, as defined, is subject to CEQA, to identify any public water system that may supply water for the proposed project and to request those public water systems to prepare a specified water supply assessment. The proposed project is subject to CEQA and may be considered a project requiring preparation of a water supply assessment because it is a proposed industrial facility occupying more than 40 acres of land.

## 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 RWQCB. Any actions of the projects that would be applicable under California Water Code Section 13260 would be reported to the Lahontan Region RWQCB.

## Lahontan 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 Region, which extends from the Oregon border to the Northern Mojave Desert and includes all of California east of the Sierra Nevada crest.

## Senate Bills 610 and 221

Senate Bill (SB) 610 and SB 221, passed in 2001, are companion measures that seek to promote more collaborative planning among local water suppliers and cities and counties. The measures require that a water supply assessment (WSA) occur early in the land use planning process for all large-scale development projects. If groundwater is the proposed supply source, the required assessments must include detailed analyses of historic, current, and projected groundwater pumping and an evaluation of the sufficiency of the groundwater basin to sustain a new project's demands. They also require an identification of existing water entitlements, rights, and contracts and a quantification of the prior year's water deliveries. In addition, the supply and demand analysis must address water supplies during normal, single, and multiple dry years, presented in 5-year increments for a 20-year projection. In accordance with these measures, a WSA is required for a proposed industrial, manufacturing, or processing plant that would house more than 1,000 persons; occupy more than 40 acres of land; or have more than 650,000 square feet of floor area (California Water Code, Section 10912).

## California Integrated Solid Waste Management Act of 1989 or Assembly Bill 939

Pursuant to the California Integrated Solid Waste Management Act of 1989 (Public Resources Code [PRC] Section 40050, et seq.) or Assembly Bill (AB) 939, all cities in California are required to reduce the amount of solid waste disposed in landfills. AB 939 required a reduction of 25 percent by 1995 and 50 percent by 2000. Contracts that include work that will generate solid waste, including C&D 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, waste 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

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 C&D, the State recommended an expansion of California Green Building Code standards that incentivize green building practices and increase diversion of recoverable C&D 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 C&D materials suitable for reuse, compost, or anaerobic digestion before residual wastes are considered for energy recovery.

## California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act of 1991 (PRC Chapter 18) identified a lack of adequate areas for collecting and loading recyclable materials, resulting in a significant impediment to diverting solid waste. This act requires state and local agencies to address access to solid waste for source reduction, recycling, and composting activities. Each local agency must adopt an ordinance related to adequate areas for collecting and loading recyclable materials for development projects.

# Local

## Antelope Valley Integrated Regional Water Management Plan and the Integrated Regional Urban Water Management Plan for the Antelope Valley

The Antelope Valley 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 (AVIRWMG, 2013).

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 (AVIRWMG, 2013).

## Antelope Valley Watermaster

In accordance with the 2015 adjudication of the Antelope Valley Groundwater Basin establishing a safe yield and decreased respective water rights among groundwater producers, the Antelope Valley Watermaster Board and Advisory Committee were formed in 2016. (Antelope Valley Watermaster, 2019). The Watermaster is responsible for administrating adjudicated water rights within the Antelope Valley, including approving new production wells, collecting and reviewing groundwater production reporting forms, and producing annual reports summarizing overall groundwater production and replenishment in the Basin (Todd, 2017).

## Kern County Integrated Waste Management Plan

The Kern County Public Works Department (KCPWD) is required by the State to plan and implement waste management activities and programs in the County unincorporated area to assure compliance with AB 939 and subsequent State mandates. The Kern County Integrated Waste Management Plan (IWMP) includes a Reduction and Recycling Element, Household Hazardous Waste Element, and Non-Disposal Facility Element. The Plan was approved February 1998 by the California Integrated Waste Management Board (now California Department of Resources Recycling and Recovery or CalRecycle). The Kern County IWMP is the long-range planning document for landfill facilities.

## Kern County Construction Waste Diversion Requirements per the California Green Building Code

As part of compliance with the State of California Green Building Code Requirements (known as CALGreen) that took effect beginning January 2011, Kern County implemented the following construction waste diversion requirements:

Submittal of a Construction Waste Management Plan prior to project construction for approval by the Kern County Building Department.

Recycling and/or reuse of a minimum 50 percent of C&D waste.

Recycling or reuse of 100 percent of tree stumps, rocks and associated vegetation and soils resulting from land clearing (County of Kern, 2017a).

## Kern County Public Works Department Recycling Programs

As mentioned above, the Waste Operations Division of the Kern County Public Works Department administers or sponsors the following recycling programs, which contribute toward meeting state-mandated solid waste diversion goals to achieve 75 percent recycling, composting, or source reduction of solid waste by 2020:

Recycling programs at landfills to recycle or divert a wide variety of products, such as wood waste, cathode ray tubes, tires, inert materials, appliances, etc.;

Drop-off recycling centers for household recyclables. The County- and the City-operated drop-off recycling centers, which are located in the unincorporated metropolitan area and the city, may be used by both county and city residents;

Financial assistance for operation of the City of Bakersfield Green Waste Facility;

The Kern County Special Waste Facility for the disposal of household hazardous waste. Services are provided to all Kern County residents;

Semi-annual "bulky waste" collection events, which are held in the Bakersfield area and available to both County and city residents (co-sponsor);

Christmas tree recycling campaign (participates jointly with the City of Bakersfield);

Telephone book recycling program (co-sponsors with Community Clean Sweep);

Community Clean Sweep summer workshops called "Trash to Treasure," which educate children about recycling and other Kern County Waste Management Department programs (sponsor);

An innovative elementary school program called the "Clean Kids Hit the Road Puppet Show" (operates in collaboration with Community Clean Sweep); and

Recycling trailers for churches, schools, and nonprofit organizations.

## Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for utilities and service systems applicable to the proposed 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 proposed project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

### *1.4 Public Facilities and Services*

#### *Goal*

Goal 1: Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.

Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.

Goal 9: Serve the needs of industry and Kern County residents in a way that does not degrade the water supply and the environment and protect public health and safety by avoiding surface and subsurface nuisances resulting from the disposal of hazardous wastes, irrespective of the geographic origin of the waste.

#### *Policies*

Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.

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.

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.

#### *Implementation Measures*

Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

Measure D: Involve utility providers in the land use and zoning review process.

## *1.9 Resources*

#### *Goals*

Goal 3: Ensure the development of resource areas minimize effects on neighboring resource lands.

Goal 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.

## *1.10 General Provisions*

### 1.10.1 Public Services and Facilities

#### *Policies*

Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

***Implementation Measures***

Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

Measure D: Involve utility providers in the land use and zoning review process.

Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

## *Chapter 5. Energy Element*

### 5.4.5 Solar Energy Development

***Goal***

Goal 1: Encourage safe and orderly commercial solar development.

***Policies***

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Policy 4: The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species.

***Implementation Measure***

Measure B: The County should work with affected state and federal agencies and interest groups to establish consistent policies for solar energy development.

# 4.17.4 Impacts and Mitigation Measures

## Methodology

Potential impacts to utilities and service systems associated with construction and operation of the proposed project have been evaluated using a variety of resources, including multiple online sources and published documents, as well as the project-specific Water Demand Memorandum (Aztec, 2016a) located in Appendix I-2 and the Water Supply Assessment (AECOM 2019) located in Appendix I-3 of this EIR/EA. In addition, current data obtained from the County and State of California about the capacity of landfills was used to identify potential impacts. Using these resources and professional judgment, impacts were analyzed according to significance criteria established in Appendix G of the CEQA *Guidelines*, described below.

## Thresholds of Significance

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

A project could have a significant adverse effect on utilities and service systems if it would:

a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;

b. Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;

c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition the provider's existing commitments;

d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or

e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

Kern County determined in the Notice of Preparation/Initial Study (NOP/IS) that the following environmental issue areas would result in no impacts and therefore, are scoped out of this EIR/EA. Please refer to Appendix A of this EIR/EA for a copy of the NOP/IS and additional information regarding these issue areas:

c. Result in a determination by the wastewater treatment provider that serves or may serve the proposed project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

As detailed in the NOP/IS, the proposed project would generate a minimal volume of wastewater. Wastewater produced during construction would be collected in portable toilet facilities and disposed of at an approved facility. During operation, no permanent onsite staff would be required and the proposed project would not require new water or wastewater disposal systems. The O&M building for the Manzana

Project would be available for the personnel who provide routine maintenance and PV cleaning several times a year. Water for panel washing would be brought in by trucks. Therefore, minimal wastewater would be generated and the proposed project would not exceed wastewater treatment requirements of the Lahontan RWQCB. No further analysis for these issues areas is warranted in the EIR/EA.

# Project Impacts

**Impact 4.17-1: The project would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.**

## Construction

### *Water*

The proposed project would require an estimated 200 acre-feet (AF) of water during construction for dust suppression, concrete manufacturing, truck wheel washing, equipment washing, and fire safety. Water required during construction would most likely be supplied from an existing offsite well on the California Portland Cement Company property located approximately 0.44 mile southeast of the project site (AECOM 2019). Other water sources may include water delivery by tanker truck or development of wells on nearby public lands within the Manzana Project. Well water is not expected to require treatment for construction use. Potable water would be brought to the project site via water trucks for drinking and domestic needs for construction workers. Therefore, no relocation or construction of new or expanded water facilities would be required and impacts would be less than significant.

### *Wastewater*

As discussed above, construction of the proposed project would generate a minimal volume of wastewater. During construction activity, wastewater would be contained within portable toilet facilities and would be trucked offsite 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. Therefore, no relocation or construction of new or expanded wastewater or wastewater treatment facilities would be required and no impact would occur.

### *Stormwater Drainage*

The project area is presently drained by natural drainage channels and sheet flow and does not rely on constructed stormwater drainage. The existing pattern and concentration of runoff could potentially be altered by project activities, such as the grading of access roads; however, the amount of runoff across the project site would not be substantially altered. All new roads within the project site would avoid streambed crossings and ephemeral drainages. The proposed project would create a small amount of additional impervious surface and may require a small amount of imported water for dust suppression during construction (200 AF); however, these changes would not substantially increase the amount of storm water

runoff from the project site. Further evaluation of the storm water drainage of the site can be found in Section 4.10, Hydrology and Water Quality, of this EIR/EA.

In compliance with National Pollutant Discharge Elimination System General Construction Permit requirements, the proposed project would design and submit a site-specific Storm Water Pollution Prevention Plan to minimize the discharge of wastewater during construction and a Water Quality Management Plan that include best management practices for runoff control. Therefore, the proposed project is not expected to exceed the capacity of existing storm water drainage systems in the and relocation or construction of new or expanded stormwater drainage facilities would not be required. Impacts would be less than significant.

### *Electric Power*

No electrical facilities are located on the project site and the site is currently vacant, located on generally undeveloped rangeland with the closest populated areas approximately 12 to 16 miles away. Electricity for construction would be provided by SCE and a hookup would be installed on the project site. The project would include construction of an underground 0.75 miles of a 34.5 kV collector line between the project site and the Manzana substation, where transformers would step up the energy from 34.5 kV to 230 kV. Then energy would be transferred to the SCE Whirlwind Substation using the existing Manzana Wind 230 kV gen-tie line. Because construction of the proposed project would not displace existing electrical facilities, and would tie into existing offsite facilities, relocation of electrical facilities would not be required. During construction, installation of the new electrical infrastructure would create a temporary environmental disturbance; however, since the electrical power lines would be placed underground for the duration of operation and maintenance, there would be less than significant impacts.

### *Natural Gas*

No natural gas pipelines are located on the project site, nor would natural gas be required for project construction. Therefore, relocation or construction of new or expanded natural gas facilities would not be required and impacts would be less than significant.

### *Telecommunications*

No existing telecommunication facilities are located onsite. During construction, cellular or satellite communication technology may be used for both internet and telephone systems, which would not require construction of new telecommunication facilities.

The proposed project would require telecommunications facilities to meet the communication requirements for interconnecting with the SCE Whirlwind Substation and to support project operations during monitoring. Fiber optic communication lines would follow the electrical collector system. The communication lines would link each solar inverter module to the offsite Manzana substation and O&M building, which would house the supervisory control and data acquisition (SCADA) system. Hard-wired (landline) systems for operational use during completion of electrical construction activities would also be installed. Since construction of the fiber optic communication lines would follow the electrical collector system and land line systems would also follow the electrical collector system, relocation of telecommunication facilities would not be required. The construction of new telecommunication facilities would occur on vacant land and, thus, construction of such facilities would not result in environmental impacts. Therefore, impacts associated with telecommunications facilities would be less than significant.

# Operation

## *Water*

During project operation, panel washing activities could occur periodically throughout the year and would generate an annual water need of an estimated 5 AFY (AECOM 2019). Water for panel washing would most likely be provided by an existing offsite well located approximately 0.44 miles southeast of the project site. Well water is not expected to require treatment for operational use. Other water sources may include water delivery by tanker truck or development of wells on nearby undeveloped public lands within the Manzana Project. Although it is unlikely, should any new wells be developed, these wells would be subject to the review and approval of the Antelope Valley Watermaster. There would be no permanent employees onsite nor permanent water-generating facilities. Therefore, operation of the proposed project would not require the relocation or construction of new or expanded water facilities such that a significant impact would occur, and operational impacts would be less than significant.

## *Wastewater*

As discussed above, during operation, no permanent onsite staff would be required and the proposed project would not require new wastewater disposal systems. The O&M building for the Manzana Project would be available for the personnel who provide routine maintenance and PV cleaning several times a year. Therefore, operation of the proposed project would not require the relocation or construction of new or expanded wastewater treatment facilities and no impacts would occur.

## *Stormwater Drainage*

The design of the proposed project is such that storm water would remain onsite and infiltration would occur similar to existing conditions. The project site is undeveloped, relatively flat, and covered with soils that allow for storm water percolation. The impervious surfaces required for the inverters and other infrastructure would be minimized as much as possible and no project component would concentrate runoff that exceeds the capacity of existing onsite drainages and percolation. Changes in impervious area would be limited to solar panel columns and substations. Solar panels do not measurably increase impervious area since they are mounted on small columns and allow percolation of runoff from each panel to occur in pervious areas effectively the same size as the panel. Any associated runoff produced would follow its natural flow once in the pervious area. Since the impervious surfaces would be surrounded by undeveloped land, runoff from the inverters and other infrastructure would percolate to the surrounding pervious area and mainly follow its natural flow. However, with implementation of Mitigation Measure MM 4.10-1, in Section 4.10, Hydrology and Water Quality, a drainage plan would be developed that would include measures to offset increases in stormwater runoff caused by the proposed project. During the operational phase, the project site would not regularly discharge stormwater that would require the construction of storm water drainage infrastructure. The proposed project is not expected to exceed the capacity of existing storm water drainage systems in the area. Therefore, relocation or construction of new or expanded stormwater drainage facilities offsite would not be required during operation. Impacts would be less than significant with implementation of Mitigation Measure MM 4.10-1.

### *Electric Power*

Project operation would generate 44 MW of renewable electrical energy that would help to reduce or offset electricity on the state-wide utility grid. The existing infrastructure (i.e., Manzana substation, 230 kV gen-tie line, and SCE Whirlwind Substation) has adequate capacity to accept the additional 44 MW that would be generated by the proposed project without modifications. Non-renewable resources would be consumed during operation and predominantly associated with worker commute trips and occasional panel washing activities, resulting in the consumption of approximately 3 kWh/year of electricity. The proposed project would require minimal electric power for operation and maintenance, which would be provided by the onsite PV system. Therefore, relocation or construction of new or expanded electrical facilities would not be required during operation and impacts would be less than significant.

### *Natural Gas*

No natural gas facilities would be required for operation of the proposed project. The project includes a solar array and battery storage station that would not require heating from natural gas during operation. Therefore, operation of the proposed project would not require the relocation or construction of new or expanded natural gas facilities and no impacts would occur.

### *Telecommunications*

The project would require telecommunications facilities to meet the communication requirements for interconnecting with the SCE Whirlwind Substation and to support project operations during monitoring. During operation, the SCADA system would allow individual solar inverter modules and other project elements to be monitored and controlled in the O&M building from remote locations. Additional fiber optic lines required for the operational phase of the proposed project would be located in proximity to the other telecommunication facilities and would not result in additional demand such that the construction of offsite facilities would be required. Therefore, impacts would be less than significant.

### *Mitigation Measures*

Implementation of Mitigation Measure MM 4.10-1 would be required. (See Section 4.10, *Hydrology and Water Quality*, for full text.)

## Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

### Impact 4.17-2: The project would have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

Water requirements for the proposed project during construction and operation were determined in the Water Demand Memorandum and Water Supply Assessment prepared for the proposed project (see Appendix I-2 and I-3 of this EIR/EA). The project's construction water demand is estimated to be 200 AF over an 8-month construction period and approximately 315 AF throughout the anticipated life of the proposed project (approximately 25 years). The water required during decommissioning is expected to be similar to construction water demands. Non-potable water required during construction, operation, and decommissioning would most likely be supplied from an existing offsite well on the California Portland

Cement Company property located approximately 0.44 miles southeast of the project site. Other water sources may include water delivery by tanker truck or development of wells on nearby public lands within the Manzana Project. During construction and decommissioning, potable water would be brought to the site via water trucks for drinking and domestic needs for construction workers. During operation, there would be no permanent onsite staff, therefore no additional potable water would be required. Routine maintenance personnel would use potable water currently provided to the existing O&M building.

The project site is located within the Antelope Valley Groundwater Basin. As described above, the adjudication process for the Basin was completed in 2015 which established a safe yield of 110,000 AFY. If non-potable water is obtained from the existing well located offsite, any groundwater pumped would be expected to fall within the water rights bestowed upon the well's operator by the 2015 adjudication and would be subject to the approval of the Antelope Valley Watermaster taking into account water availability during Normal, Single Dry Year, and Multiple Dry Years as presented in the 2015 UWMP (AVEK, 2016). Although not anticipated due to the minor amount of water needed for construction, operation, and decommissioning of the proposed project, water supply would be subject to the adjudication Judgment of the Watermaster. Water supplemented by SWP supply has been important to extending water supply to increased demands and has reduced pressure on groundwater resources in some parts of the Basin (AECOM 2019). It is expected that additional storage and recharge to the Basin will result from future adjudication requirements and regional water banking. However, groundwater supplies in the Basin are considered adequate to supply the proposed project over a 25-year period (AECOM 2019).

If drilling and installing a groundwater well or wells on nearby undeveloped public lands within the Manzana Project is necessary to obtain non-potable water, the project proponent/operator would be required to complete the necessary application paperwork required by the Antelope Valley Watermaster for approval in order to secure the necessary water rights and install proposed wells. Throughout the operation of any new wells, all required monitoring and reporting forms would be submitted to the Watermaster for review.

Because the amount of water required for the proposed project would be minimal and would be obtained from an existing well with existing water rights or payment of fees, or through a Watermaster-approved new groundwater well or wells, impacts related to water supply would be less than significant. See also the discussion in Section 4.10, *Hydrology and Water Quality*, which indicates that the project site is located in the Willow Springs subbasin of the Antelope Valley Groundwater Basin, where groundwater levels are rising.

## 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.

The local infrastructure that would collect solid waste from the project site would most likely be the Mojave-Rosamond Landfill (approximately 17 miles northeast). As of 2019, approximately 76,310,297

cubic yards (97.8 percent of the total 78,000,000 cubic yards capacity) remained. The permitted maximum daily disposal is 3,000 tons per day (see Table 4.17-1). Another solid waste disposal site that could serve the proposed project is the Tehachapi Sanitary Landfill, approximately 13 miles north. However, this landfill is scheduled to close June 1, 2020 in which case the Boron landfill may be an alternative and is not projected to close until 2048. Project construction is anticipated to begin late 2020 and last for a period of 6 to 9 months.

The project would be consistent with solid waste reduction goals as discussed under Impact 4.17.4.

### *Construction*

It is anticipated the proposed project would not generate substantial amounts of waste during construction. Currently, the project site contains no development and, therefore, there would be no demolition or removal of large debris. Materials brought to the project site would be used to construct facilities, and few residual materials are expected. Non-hazardous construction refuse and solid waste would either be collected and recycled or disposed of at a local landfill. Any hazardous waste generated during construction would be disposed of at an approved location.

The small amount of solid waste generated by construction activities is not expected to exceed the capacity of these landfills. Additionally, the construction period for the proposed project is expected to be 6 to 9 months (beginning late 2020) and at least one of the landfills that would serve the proposed project would be in operation during the construction period. Furthermore, the amount of materials needed to construct the solar arrays and gen-tie line (that would connect to existing facilities) is expected to generate minimal amounts of waste. 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 proposed project to local infrastructure and attainment of solid waste reduction goals would be less than significant.

### *Operation*

The project site would produce small amounts of waste associated with O&M activities. PV solar system waste typically includes broken and rusted metal, defective or malfunctioning modules, electrical materials, and empty containers and other miscellaneous solid materials. Most of these materials would be collected and delivered back to the manufacturer for recycling. Small amounts of typical household/office refuse would be generated by workers during maintenance visits. No permanent onsite staff would be required. The operation of the new gen-tie line connection would not require full-time personnel or cleaning, and would therefore not generate solid waste during operation.

As described above, at least one of the existing landfills have adequate capacity to serve the project, and the recycling of decommissioned materials would further reduce the project's waste stream. Post-construction operational solid wastes would most likely be disposed of at the Mojave-Rosamond Landfill, which is permitted to operate through 2123. Therefore, operational solid waste could be disposed of at this landfill during the operational lifespan of the proposed project (approximately 30 years). 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 operation. Therefore, operational impacts of the proposed project to local infrastructure and attainment of solid waste reduction goals would be less than significant.

### *Decommissioning*

Solar photo voltaic (PV) panels have an approximate 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. Decommissioning of the new gen-tie line route would not generate substantial amounts of solid waste. During decommissioning, a collection and recycling program would be implemented to recycle project components and minimize disposal of project components in landfills. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities, in accordance with applicable federal, State, and County regulations. Following decommissioning, the project site would be returned to predevelopment conditions. The decommissioning process could result in larger volumes of waste that require disposal. However, implementation of recycling coordination required in Mitigation Measure MM 4.17-1 would reduce impacts associated with decommissioning to local infrastructure and attainment of solid waste reduction goals to a less-than-significant level.

## Mitigation Measures

**MM 4.17-1:** During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible.

1. An onsite Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance, 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 that waste 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 and Bureau of Land Management (BLM) 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 project would generate solid waste during construction, operation, and decommissioning. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related

to land development. AB 341 requires Kern County to attain waste diversion goals of 75 percent by 2020 through reduction, recycling, or composting. In addition, as part of compliance with CALGreen requirements, Kern County implements the following construction waste diversion requirements:

- Submittal of a Construction Waste Management Plan
- Recycle and/or reuse a minimum 50 percent C&D waste
- Recycle or reuse 100 percent of tree stumps, rocks, and associated vegetation and soils resulting from land clearing

Furthermore, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. Implementation of Mitigation Measure MM 4.17-1 would ensure compliance with waste diversion and recycling requirements by requiring recycling during construction, operation, and decommissioning of the proposed 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 proposed project would result in less-than-significant impacts regarding compliance with management and reduction statutes and regulations related to solid waste.

## Mitigation Measures

Implementation of Mitigation Measure MM 4.17-1 would be required.

## Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.17-1, impacts would be less than significant.

# Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for cumulative analysis of impacts on water supply and wastewater are the related projects that would impact the Antelope Valley Groundwater Basin. The geographic scope of analysis for stormwater drainage, solid waste disposal, electricity, natural gas, and telecommunications includes the projects that would be relying on the same facilities and infrastructure. Impacts of the proposed project would be cumulatively considerable if the incremental effects of the proposed project when combined with other past, present, or reasonably foreseeable projects (listed in Table 3-5, *Cumulative Projects List*, in Chapter 3, *Project Description*) would result in a significant cumulative effect. Physical impacts to public services, utilities, and service systems are usually associated with population in-migration and growth in an area, which increase the demand for a particular service, leading to the need for expanded or new facilities. There is little to no growth associated with the proposed project and nearby other solar and wind energy projects, thereby limiting the potential to contribute to demand for a particular service.

As described above, the proposed project would place few demands on water, wastewater, stormwater drainage, solid waste disposal (during construction and operation), electricity, natural gas, and telecommunications.

## Water

Several utility-scale renewable energy projects are proposed in the Antelope Valley that would impact the existing water supply, which is derived almost entirely from the Antelope Valley Groundwater Basin. The water-intensive use period for renewable energy projects is typically the construction phase. Given the limited water supply in the area, other projects are expected to either rely on new or existing wells (similar to the project) or truck in their water supply. In response to the recent adjudication of the Antelope Valley Groundwater Basin, all projects relying on water from the Basin would be required to obtain water from water purveyors that have existing water rights within the Basin, or would be required to apply for new water rights from the Antelope Valley Watermaster. New water rights may or may not be granted. Any projects that cannot secure a water supply would not move forward to construction or operation. Therefore, cumulative impacts related to water supply and facilities would be less than significant.

## Wastewater

The project is located in an area with no wastewater treatment provider and is not expected to generate a significant amount of wastewater. Wastewater produced during construction would be collected in portable toilet facilities and disposed of at an approved facility. Well water used onsite is not anticipated to require treatment for construction and operational uses. No permanent staff would be required and the O&M building for the Manzana Project would be available for personnel who provide routine maintenance and PV cleaning. Therefore, the proposed project would not substantially contribute to a cumulative impact on wastewater treatment facilities.

## Stormwater Drainage

As described above, 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. The existing pattern and concentration of runoff could potentially be altered by project activities, such as the grading of access roads. However, the amount of runoff across the project site would not be substantially altered, such that new stormwater drainage facilities are needed. In accordance with Mitigation Measure MM 4.10-1, the proposed project would implement a drainage plan that would incorporate measures to offset increases in stormwater flows caused by the proposed project. Other projects in the vicinity would be required to offset substantial increases in stormwater as well per County requirements.

Surrounding projects would also be required to prepare a drainage plan that would help avoid substantial increases of stormwater generated onsite by their respective ground disturbance. Depending on the findings of their respective drainage plans, these projects may need to construct stormwater control structures onsite to reduce the potential for increased stormwater runoff. Therefore, the proposed project would not substantially contribute to a cumulative impact on stormwater drainage facilities.

## Solid Waste

The proposed project would generate a minimal amount of waste and is not expected to significantly impact Kern County landfills. Although the Tehachapi Landfill is expected to cease operation in 2020, the Mojave-Rosamond Landfill is expected to operate until 2123. However, generation of waste from cumulative projects, including other solar and wind projects, could result in a cumulative impact. To ensure that the proposed project reduces the amount of waste sent to landfills, implementation of Mitigation Measure MM

4.17-1 requires that debris and waste generated shall be recycled to the extent feasible, and an onsite recycling coordinator be designated by the project proponent to facilitate recycling efforts. With implementation of Mitigation Measure MM 4.17-1, the project's incremental contribution would be less than cumulatively considerable. Furthermore, other cumulative projects would also be required to comply with State and local waste reduction policies.

## Electricity

There are no existing electrical facilities on site. The proposed project would include construction of a collector line that would tie into existing facilities and provide 44 MW of renewable electrical energy to the state-wide utility grid. Electricity demand of the proposed project would be minimal and would be provided by the onsite PV system. This project in combination with other cumulative solar projects in East Kern County would help to reduce or offset electricity on the statewide utility grid and therefore provide a beneficial cumulative impact on electrical demand and facilities.

## Natural Gas

There are no existing natural gas facilities on the project site nor would natural gas be required for construction and operation of the proposed project. Therefore, the proposed 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.

## Conclusion

In conclusion, the proposed project would be 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 4.10-1 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 and MM 4.17-1 would be required. (See Section 4.10, *Hydrology and Water Quality*, for full text.)

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 and MM 4.17-1, cumulative impacts would be less than significant.

Section 4.18
**Wildfire**

# 4.18.1 Introduction

This section of the EIR/EA describes the affected environment and regulatory setting for wildland wildfire. The section includes the physical and regulatory setting for the project, the methods used in evaluating these potential impacts, the criteria used to evaluate the significance of potential impacts, and an analysis of potential impacts from wildfire. The analysis in this section is based on review of the project plans, information from the California Department of Forestry and Fire Protection (CAL FIRE), and Kern County Fire Hazards Severity Zone (FHSZ) Maps.

# 4.18.2 Environmental Setting

## Site Characteristics and Fire Environment

The project site consists of undeveloped desert lands and wind energy turbines. The surrounding land is primarily undeveloped land with some wind energy turbines and rural residential development outside of the southwestern portion of the project site. CAL FIRE maps FHSZs based on factors such fuel, slope, and fire weather to identify the degree of fire hazard throughout California (e.g., moderate, high, or very high). While FHSZs do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and are therefore of greater concern. FHSZs are designated within Local Responsible Areas (LRAs), where local jurisdictions are financially responsible for the costs of wildfire prevention and suppression, and State Responsibility Areas (SRAs), where the State is responsible for such costs. According to the FHSZ Maps for the LRA in Kern County, the project site is classified as an LRA and Federal Responsibility Area (FRA) Moderate zone (see **Figure 4.18-1,** *Fire Hazard Severity Zones for Local Responsibility Areas*). 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. The portion of the project site that is within the jurisdiction of Kern County is categorized as an SRA Moderate zone (see **Figure 4.18-2,** *Fire Hazard Severity Zones for State Responsibility Areas*).

## Fire History

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources. Fire history represented in this section uses CAL FIRE's California Statewide Fire Incidents Map, which shows the history of fires back through 2011 (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 recorded history have burned across the project site (CAL FIRE 2019a). The closest recorded fire, based on a review of CAL FIRE's California Statewide Fire Maps, was the Antelope Fire, located approximately 11.5 miles north of the project site, and occurred in September 2015.

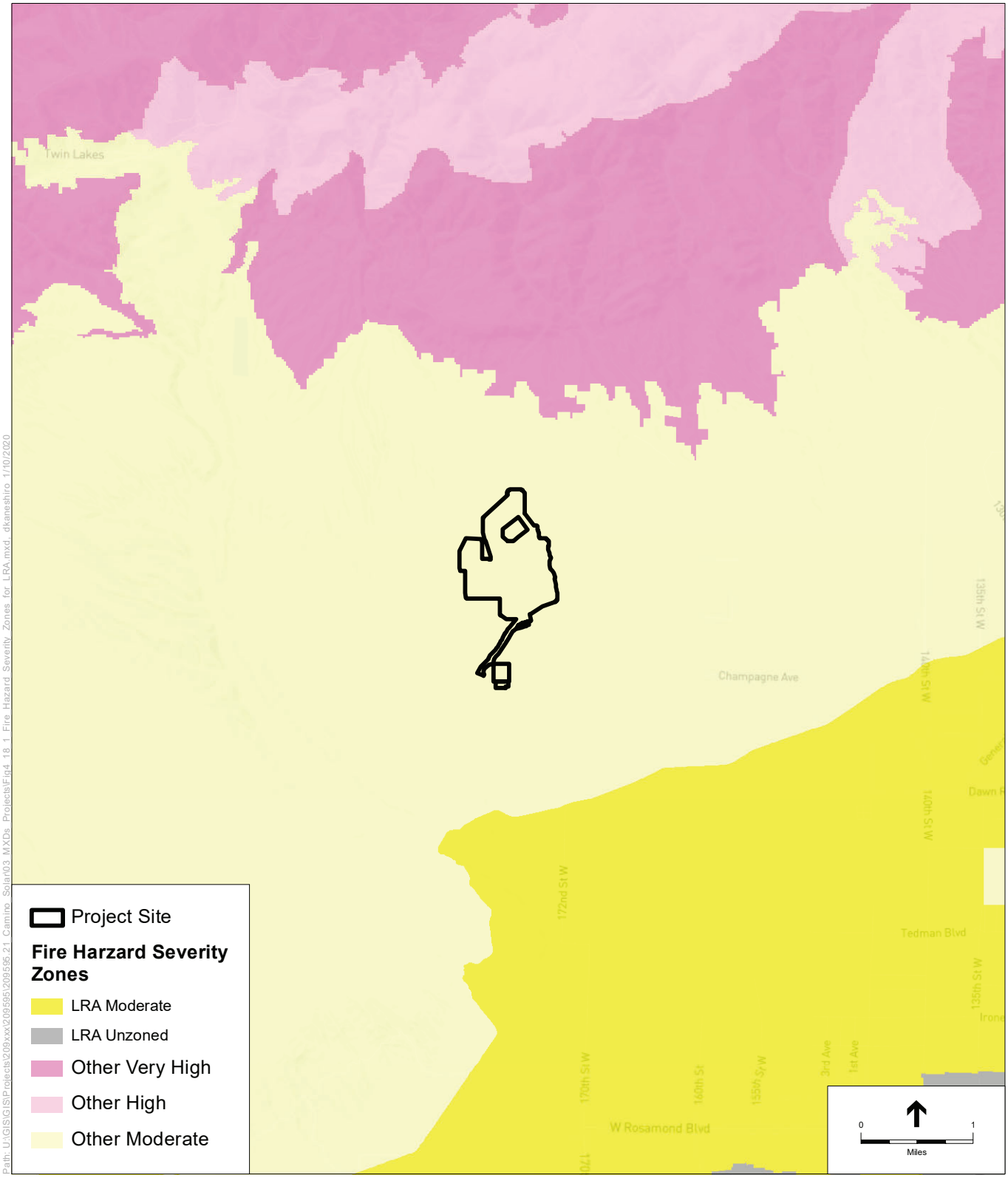


**Figure 4.18-1: FIRE HAZARD SEVERITY ZONES FOR LOCAL RESPONSIBILITY AREAS**

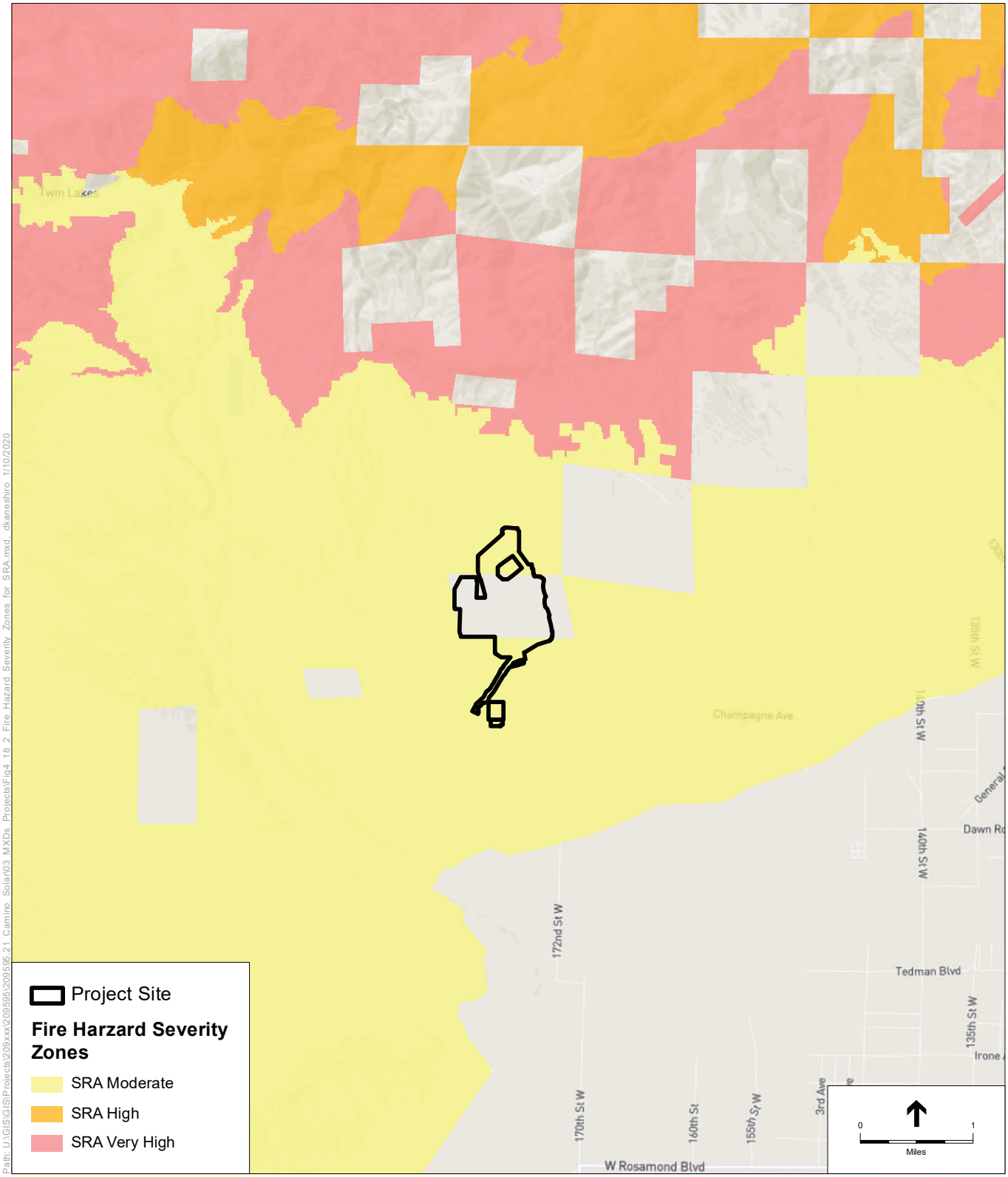


**Figure 4.18-2: FIRE HAZARD SEVERITY ZONES FOR STATE RESPONSIBILITY AREAS**

## Vegetation (Fuels)

The project site is characterized by sparse vegetation (SWCA 2017). A total of 107 plant species were identified on the project site during the biological surveys conducted by SWCA in 2016 and 2018. Nine vegetation communities and land cover types occur within the project site.

A description of the vegetation communities and land cover types are provided in Section 4-4, *Biological Resources*. Acreages of vegetation communities and land cover types are provided in **Table 4.18-1**.

**TABLE 4.18-1: VEGETATION COMMUNITY OR LAND COVER TYPE ON THE PROJECT SITE**

| Vegetation Community or Land Cover Type | Acreage |
|---|---|
| *Bromus rubens – Schismus* (*arabicus, barbatus*)<br>Herbaceous Semi-Natural Alliance<br>Red Brome or Mediterranean Grass Grasslands | 277 |
| *Juniperus californica* Woodland Alliance<br>California Juniper Woodland | 7 |
| *Yucca brevifolia* Woodland Alliance<br>Joshua Tree Woodland | 2 |
| *Larrea tridentata* Shrubland Alliance<br>Creosote Bush Scrub | 3 |
| *Eriogonum fasciculatum* Shrubland Alliance<br>California Buckwheat Scrub | 10 |
| *Ambrosia salsola* Shrubland Alliance<br>Cheesebush Scrub | 5 |
| *Ephedra nevadensis* Shrubland Alliance<br>Nevada Joint Fir Scrub | 67 |
| *Lepidospartum squamatum* Shrubland Alliance<br>Scale Broom Scrub | -* |
| Disturbed | 12 |

* Scale broom scrub occurs just outside the project boundary but this vegetation community is a California Department of Fish and Wildlife sensitive natural community with a 200-foot setback. This setback intersects with the project site.

# 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.

## 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 is important for soil stability may be maintained, as may single specimens of trees or other vegetation that is maintained to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. California Public Resources Code Section 4291-4299 et seq. applies to both high fire threat districts, as determined by the California Public Utilities Commission pursuant to its rulemaking authority, and SRAs. As previously stated under section 4.18.2, *Environmental Setting*, the portion of the project site within an SRA area is designated as SRA Moderate and is outside of areas identified by CAL FIRE as having substantial or very high risk. Additionally, the Public Resources Code outlines infraction fees, certification, and compliance procedures applicable with

state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code.

# Local

## Kern County General Plan

### *Chapter 4: Safety Element*

#### 4.6 Wildland and Urban Fire

***Policies***

Policy 1 Require discretionary projects to assess impacts on emergency services and facilities

Policy 4 Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 6 All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

***Implementation Measures***

Measure A Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

## Kern County Fire 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 (County of Kern 2017b).

### *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 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 proposed 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 (SWCA 2018a), Cultural Resources Survey Report (SWCA 2017), Preliminary Drainage Report (Aztec 2016a), project location maps, and project characteristics. Wildfire impacts are considered on the basis of: (1) off-site wildland fires that could impact the proposed project, and (2) on-site generated combustion that could affect surrounding areas. Using the aforementioned resources and professional judgment, impacts were analyzed according to California Environmental Quality Act (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 SRAs 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; or

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

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/EA for a copy of the NOP/IS and additional information regarding these issue areas:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

As discussed further in the NOP/IS, the proposed project site is located in an area with several alternative access roads allowing access to the project site in the event of an emergency. Access to State Route 14 and State Route 138 would be maintained throughout construction, and appropriate detours would be provided in the event of potential road closures. Therefore, no significant impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan would occur.

# Project Impacts

### Impact 4.18-1: The project would, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

As discussed in Section 3, *Project Description*, the project proposes to develop a photovoltaic (PV) solar facility and would not include the development of residential uses on the project site. The nearest residential uses to the project site are located approximately 3 miles southeast of the project site.

As described above, according to the FHSZ Maps for the LRA in Kern County, the project site is located within a moderate fire zone, which is considered wildland with low fire frequency and relatively modest fire behavior. The project site is sparsely vegetated, and site preparation would remove additional vegetation and replace it with solar PV panels, which reduces the risks of wildfire due to vegetation (fuel) on-site. The project would provide a cleared area within the site boundary, creating a wildland interface

buffer. Natural vegetation that remains onsite would be maintained, which would reduce the risk of wildfire from vegetation (fuel). Once constructed, the proposed project would not require any permanent employees, and the project site is not located adjacent to populated communities and thus would not expose people to the potential for wildfire.

The proposed project would include an energy storage facility that would incorporate low-wattage lithium battery units encased in a steel enclosure and set apart from combustible materials. The energy storage facility would be built with a thermal management system that includes coolant pumps, fans and a refrigerant system to further maintain cool temperatures within the unit. Given the structure of the energy storage facility, it is unlikely and difficult to burn; however, should the facility burn or become damaged by a fire, it would generate fumes and gases that are extremely corrosive to any surrounding structures on the project site. Dry chemicals, carbon dioxide, and foam are the preferred methods for extinguishing a fire involving batteries as water is not effective in extinguishing battery fires. Typically, Class D extinguishers are used for lithium-metal and other battery fires. The Kern County Fire Department, which would provide fire protection service to the project site, would have the necessary tools to extinguish any fires generated on the project site. In addition, as discussed further in Section 4-14, *Public Services*, the project 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. This would further reduce the fire risks on-site.

Given that the project site is located in a moderate fire zone, which is considered wildland with low fire frequency and relatively modest fire behavior, and that the design of the energy storage facility, along with the implementation of MM 4.14-1, would make the potential for a fire to occur on the project site unlikely, the potential for wildfires to occur on the project site is considered low. In addition, the proposed project would not include the development of residential uses on the project site. Therefore, the proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors. Impacts would be less than significant with mitigation incorporated.

### *Mitigation Measures*

Implementation of Mitigation Measure MM 4.14-1 would be required.

### *Level of Significance after Mitigation*

With implementation of Mitigation Measure MM 4.14-1, impacts would be less than significant.

**Impact 4.18-2: 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.**

As discussed in Section 3, *Project Description*, the project site is located within the central-eastern portion of the Manzana Wind Facility. Given this location, the proposed project would share the existing infrastructure, including transmission line, substation, and site access roads of the Manzana Wind Facility. As such, the project would not require the installation of any transmission lines or site access roads. However, a new a buried 34.5 kilovolt (kV) electrical collector line that would connect to the transformers of each array would be installed. The combined energy of the solar field would be transferred to the

Manzana substation using this approximately 0.75-mile-long underground 34.5 kV electrical collector line across private lands, with a single riser pole connecting the electrical collector line to the existing aboveground Manzana transmission line at the interconnection with the substation.

Most fires in the desert are caused by lightning or vehicles. 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. 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. Therefore, while the proposed project would require the installation or maintenance of associated infrastructure, the installation of the electrical collector line would not exacerbate fire risk or result in temporary or ongoing impacts to the environment. Impacts would be less than significant.

### *Mitigation Measures*

Implementation of Mitigation Measure 4.14-1 would be required.

### *Level of Significance after Mitigation*

With implementation of Mitigation Measure 4.14-1, impacts would be less than significant.

### Impact 4.18-3: 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 on-site drainage patterns and flowpaths compared to existing conditions and include the introduction of new impervious surfaces. As discussed in Section 4.7, Geology and Soils, the proposed project would require implementation of a Stormwater Pollution Protection Plan (SWPPP), as implemented by Mitigation Measure MM 4.7-4, which would include erosion- and sediment-control best management practices (BMPs) during construction, thereby reducing the potential of erosion and siltation, and would control potential impacts from flooding events that could occur during construction. Additionally, 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. Design measures are intended to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding on or off site. One element of the drainage plan is a retention basin to manage facility stormwater. With implementation of Mitigation Measure MM 4.10-1, final design of proposed stormwater management facilities and retention basins would be required.

Once the proposed project is operational, stormwater on-site would be collected at retention basin located at or near the outlet of each sub-basin to retain the excess post-construction runoff. A majority of the off-site flow that enters the project site would continue to sheet flow south through with no impacts from development of the proposed project. Furthermore, the soil types on-site have high infiltration rates and low runoff potential when thoroughly wet.

The project site is located at the base of the Tehachapi Mountains on an alluvial fan. Based on the fire history immediately surrounding the site, LRA and FRA 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. In addition, as described further in Section 4-7, *Geology and Soils*, conditions for landslides are not present at the project site, which is characterized by relatively gradual inclines across the site. 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.

### *Mitigation Measures*

Implementation of Mitigation Measure MM 4.7-4 would be required.

### *Level of Significance after Mitigation*

With implementation of Mitigation Measure MM 4.7-4, impacts would be less than significant

## Cumulative Setting, Impacts, and Mitigation Measures

Incremental impacts of the proposed project could contribute to a cumulative effect on wildland fire risk in combination with other past, present, or reasonably foreseeable future actions. For purposes of this analysis, the geographic scope of the cumulative effects analysis 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 Table 3-5, *Cumulative Projects List*, there are approximately 17 solar and non-solar projects proposed or approved throughout the Antelope Valley in Kern County and in the desert portion of Kern County outside the Antelope Valley. Of the approximately 17 total projects in Kern County, 9 would be located within 6 miles of the project site and one solar facility would be located within 4 miles 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 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 including fire prevention and emergency response training for site personnel. As concluded in the discussion of project impacts above, the project would have no impact related to impairment of an adopted emergency response or evacuation plan. Similar to the project, related projects would be required to determine whether they are classified as being within a high fire hazard severity zone, identified within an emergency evacuation route or within an adopted emergency evacuation plan, and whether they meet the requirements of applicable Fire Code and Building Code. 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 SRAs and/or High Fire Hazard Severity Zones, some related projects in the area may be. Similar to the proposed project, all related projects would be required to implement building and landscape design features in accordance with the Fire Code and Building Code to reduce wildfire risk and exposure of occupants to pollutant concentrations from a wildfire. Adherence to the Fire Code and Building Code requirements would minimize potential impacts related to exposure to and the uncontrolled spread of a wildfire. As concluded in the discussion of project impacts above, the project would have a less-than-significant impact related to exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. 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 involve the installation of an electrical collector line but would share the existing infrastructure, including transmission line, substation, and site access roads of the Manzana Wind Facility to support project construction and ongoing maintenance and operation. While the potential for fire is considered moderate, Mitigation Measure 4.14-1 would be implemented to ensure that a Fire Safety Plan is prepared that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code for use during 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*

Implement Mitigation Measures MM 4.10-1 and MM 4.14-1.

### *Level of Significance after Mitigation*

Even with implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1, cumulative impacts would remain significant and unavoidable.

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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 this environmental document. Comments received during scoping have been considered in the process of identifying issue areas that should receive attention in the EIR/EA. The EIR/EA's contents were established based on the Notice of Preparation/Initial Study (NOP/IS) located in Appendix A of this EIR/EA 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/EA. 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 proposed project would not include any regular permanent employees as no operations and maintenance buildings would be constructed. Maintenance personnel would be expected to visit the project site several times per year for routine maintenance, but they would likely be drawn from the local labor force and would commute from their permanent residences to the project site during those times. However, even if the 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/EA contains a comprehensive analysis of potential environmental impacts.

After further study and environmental review, as provided in this EIR/EA, 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/EA for their potential significance:

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

# 5.2 Significant Environmental Effects that Cannot Be Avoided

Section 15126.2(b) of the CEQA *Guidelines* requires that the EIR/EA 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/EA.

After further study and environmental review, as provided in this EIR/EA, 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.

**Table 5-1**, *Summary of Significant and Unavoidable Project-Level and Cumulative Impacts of the Proposed Project*, shows 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 PROJECT-LEVEL AND CUMULATIVE IMPACTS OF THE PROPOSED PROJECT**

| Resources | Project Impacts | Cumulative Impacts |
|---|---|---|
| Aesthetics | There would be no significant and unavoidable project impacts. | The project would have cumulatively significant and unavoidable aesthetic impacts after implementation of mitigation. Although the proposed project would result in less than significant impacts related to visual character and quality of its surroundings, the project would impact views from three of eight KOPs with regard to added cultural modifications. In combination with other projects, particularly the wind turbines and other solar development that exist near the project site, the proposed project would contribute to added cultural modifications in the project area. The "cultural modifications" rating criterion for visual character and quality is likely to be incrementally increased by each additional energy development project, as this development creates a general disharmony with the still mostly undeveloped desert landscape. While other projects in the region would be required to implement similar mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. Thus, the project's contribution to cumulative impacts associated with aesthetics would be **significant and unavoidable**. |
| Air Quality | The project would cause temporary unmitigated emissions during construction that would exceed the Easter Kern Air Pollution Control District's (EKAPCD's) thresholds for $PM_{10}$. Implementation of Mitigation Measures MM 4.3-1 through 4.3-10 would reduce impacts by implementing measures such as ensuring fugitive dust is reduced during construction, requiring a Phased Grading Plan, and ensuring that air quality control measures are implemented. However, even with implementation of feasible mitigation measures, short term impacts would remain significant and unavoidable. Long-term operational impacts are expected to remain below established thresholds for criteria pollutants. Therefore, temporary construction impacts are considered **significant and unavoidable**, while operational impacts are considered **less than significant**. In addition, as it relates to the project's impact on sensitive receptors, with implementation of MM 4.3-11, impacts would be reduced to **less than significant levels**. | There are several alternative energy (wind and solar) projects that are currently undergoing the environmental review process. Several of these projects have the potential to exceed regulatory thresholds. The project, in combination with other planned projects within the region would result in temporary impacts due to construction of the project in conjunction with the related past, present, or reasonably foreseeable probable future projects. These impacts would be considered to be less than significant for all criteria pollutants except $PM_{10}$. Despite implementation of Mitigation Measures MM 4.3-1 through 4.3-10, construction of the project when considered with other projects in the County, would contribute to $PM_{10}$ emissions which exceed EKACPD's thresholds and thus would be cumulatively **significant and unavoidable**. |

**TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE PROJECT-LEVEL AND CUMULATIVE IMPACTS OF THE PROPOSED PROJECT**

| Resources | Project Impacts | Cumulative Impacts |
|---|---|---|
| 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 other past, present, and probable future projects in the Antelope Valley, the project would have an incremental contribution to a cumulative loss of foraging and nesting habitat for other special-status species, even with the implementation of project-specific mitigation measures. This loss of 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.<br>In addition, while the residual effects on migratory birds of the project were determined to be less than significant, in combination with other past, present, and reasonably foreseeable projects. Therefore, the proposed project, in combination with all identified cumulative projects, would result in a **significant and unavoidable** cumulative impact. |
| Wildfire | There would be no significant and unavoidable project impacts. | Incremental impacts of the proposed project could contribute to a cumulative effect on wildland fire risk in combination with other past, present, or reasonably foreseeable future actions. Despite implementation of Mitigation Measures MM 4.10-1, MM 4.10-2, and MM 4.14-1given 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 impairment of an adopted emergency response plan or emergency evacuation plan, the exposure of project occupants to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, and a cumulative impact related to exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a **significant and unavoidable** cumulative impact. |

# 5.3 Irreversible Impacts

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. Irreversible commitments of resources should be evaluated to ensure that such consumption is justified.

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

# 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 is no on-site workforce for the project. 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 Rosamond, Tehachapi or other 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 proposed 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 proposed 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 proposed 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 proposed 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/EA is adequate to inform the public and decision makers of the growth-inducing impacts of the project.

Chapter 6
# Alternatives

## 6.1 Introduction

The California Environmental Quality Act (CEQA) requires that an EIR describe a range of reasonable alternatives to the proposed project or to the location of the proposed project that could feasibly avoid or lessen any significant environmental impacts of the project while attaining most of the project's basic objectives. An EIR also must compare and evaluate the environmental effects and comparative merits of the alternatives. This chapter describes alternatives considered but eliminated from further consideration (including the reasons for elimination), and compares the environmental impacts of several alternatives retained with those of the proposed project.

The following are key provisions of the CEQA *Guidelines* (Section 15126.6):

- The discussion of alternatives shall focus on alternatives to the project or its site that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.
- The No Project Alternative shall be evaluated, along with its impacts. The no-project analysis shall discuss the existing conditions at the time the notice of preparation was published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a "rule of reason." Therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to 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.

# Significant Impacts of the Project after Mitigation

Implementation of the proposed project has the potential to have significant adverse effects on:

- Aesthetics (cumulative only)
- Air quality (project and cumulative)
- Biological resources (cumulative only)
- Wildfire (cumulative only)

Even with the mitigation measures described in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR/EA, impacts in these issue areas would be significant and unavoidable. Therefore, per the CEQA *Guidelines*, this section discusses alternatives that are capable of avoiding or substantially lessening effects on these resources. The significant and unavoidable impacts of the proposed project are discussed below.

## Aesthetics

When introduced into the project viewshed, the industrial nature of the proposed 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. However, as explained in this analysis, increased cultural modifications from the proposed project itself would not be substantial. In combination with other projects, particularly the wind turbines and other solar development that exist near the project site, the proposed project would contribute to added cultural modifications in the project area. Mitigation Measures MM 4.1-1 through MM 4.1-3 would help to further reduce visual impacts associated with the proposed project by limiting vegetation removal, planting native vegetation, color-treating project facilities and ensuring that the site is kept free of debris and trash. The proposed project would also implement Mitigation Measure MM 4.1-4 to reduce aesthetics impacts by requiring project lighting to be directed downward and shielded to provide the illumination needed to achieve safety and security objectives. Additionally, to further reduce glare potential, the project would be required to implement Mitigation Measures MM 4.1-5 and MM 4.1-6, which require the use of non-reflective and non-glare materials when feasible.

Additionally, while other projects in the region would be required to implement similar mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar 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 4.1-6, the project's contribution to cumulative impacts associated with aesthetics would be significant and unavoidable.

## Air Quality

With implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2, long-term increases in operational emissions of primary concern within the region (i.e., ROG, $NO_X$, CO, $SO_X$, and $PM_{10}$ and $PM_{2.5}$) would be minimal and would not exceed applicable significance thresholds. However, construction of the proposed project would result in temporary increases of $PM_{10}$ that would exceed Eastern Kern Air Pollution Control District's (EKAPCD's) significance thresholds. As a result, construction-generated emissions along with other cumulative projects located within the project area, would exceed EKAPCD's significance thresholds.

Of particular concern with regard to regional air quality impacts are emissions of ozone-precursors (ROG and $NO_X$) and $PM_{10}$, for which the regional is designated nonattainment. For these reasons, cumulative regional air quality impacts associated with short-term construction 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 proposed project in addition to the other projects under way or proposed within Kern County would impact transient wildlife species, including burrowing owls, Swainson's hawk, other raptors, and desert kit fox. The project site contains habitat that support insects, rodents, and small birds that provide a prey base for raptors and terrestrial wildlife. In addition, based on the literature review and database search completed for the proposed 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. Within the regional context and when considered with other past, present, and reasonably foreseeable future projects, the proposed project would have an incremental contribution to a cumulative loss of foraging and nesting habitat for special-status bird species. While the project would have less-than-significant impacts with the implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13, MM 4.7-4, and MM 4.9-2, when combined with related projects, the cumulative impact would be significant and unavoidable. This mitigation involves avoidance and minimization for special-status plant species, Mojave tarplant avoidance and permitting, Mohave ground squirrel permitting, preconstruction surveys for desert tortoise, general biological monitoring, construction worker training, general best management practices, raven management, preconstruction clearance surveys, preconstruction surveys for burrowing owl, measures to protect nesting birds, restoration of Mojave creosote scrub habitat, and an avian mortality monitoring program. In addition to special-status birds, 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. Thus, even implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13, MM 4.7-4, and MM 4.9-2, cumulative impacts would be significant and unavoidable to transient wildlife species, including burrowing owls, Swainson's hawk, other raptors, desert kit fox, and migratory birds.

## 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, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

# 6.2 Project Objectives

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (CEQA *Guidelines*, Section 15126.6[c]). As described in Chapter 3, *Project Description*, of this EIR/EA the following objectives have been established for the project and will aid decision makers in the review of the proposed project and associated environmental impacts.

- Generate approximately 44 megawatt (MW) of electricity at a cost that is competitive on the renewable market.
- Establish solar photovoltaic (PV) power-generating facilities 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.
- Locate the proposed project in Kern County near an existing electrical distribution system Minimize the potential impact on the environment by the following:
  - Maximize the use of existing infrastructure (transmission lines and roads).
  - Minimize the potential impacts on threatened and endangered species.
  - Reduce the emission of greenhouse gases from the generation of electricity.
- Interconnect directly to Southern California Edison's (SCE's) and/or the California Independent System Operator electrical transmission system.
- Use proven and established PV technology that is efficient, requires low maintenance, and is recyclable.
- Establish energy storage facilities of sufficient size and configuration to reliably store electricity in an economically feasible and commercially financeable manner that can be marketed to different power utility companies.
- Assist California utilities in meeting their obligations under California's Renewable Portfolio Standard (RPS). In April 2011, Governor Brown signed into law Senate Bill (SB) X1-2, which establishes a new RPS for all electricity retailers in the state. Electricity retailers must adopt the new RPS goals of 20 percent of retails sales from renewables by the end of 2013, 25 percent by the end of 2016, with the 33 percent requirement being met by the end of 2020.
- Assist California utilities in meeting their obligations under California's RPS under SB 350 (2015), which requires that 50 percent of all electricity sold in the state be generated from renewable energy sources by December 31, 2030.

- Assist California in meeting greenhouse gas (GHG) emissions reduction goal by 2020 as required by the California Global Warming Solutions Act (Assembly Bill [AB] 32), as amended by SB 32 in 2016.

# 6.3 Overview of the Proposed Project

The proposed project would include the development a solar facility and associated infrastructure with the capacity to generate up to 44 MW of renewable electric energy and/or energy storage capacity. A new 34.5 kV collector line would be constructed on private land between the project site and the Manzana Wind Power Project (Manzana Project) substation, where transformers would increase the energy from 34.5 kV to 230 kV. Then energy would be transferred to the SCE Whirlwind Substation using the existing Manzana Project 230 kV generation-tie (gen-tie) line. The solar facility would utilize PV technology and consist of solar arrays mounted on either fixed or tracking structures mounted to vertical posts. The solar facility would operate year-round and would generate electricity during the daylight hours when electricity demand is at its peak.

The project would include the following components: solar PV generating facilities and solar modules; an energy storage system; substations; an electrical collector system and inverters; generation-tie lines and an interconnection to the Statewide grid; telecommunication facilities; and site access and security measures. See Chapter 3, *Project Description*, of this EIR/EA 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 proposed project, the aforementioned objectives established for the proposed project, and the feasibility of the alternatives considered, four alternatives, including the No Project Alternative as required by CEQA, are considered in this chapter and summarized in **Table 6-1**, *Summary of Development Alternatives*. The Environmentally Superior Alternative, as required by CEQA, is described in Section 6.8, *Environmentally Superior Alternative*, below.

## Alternative 1: No Project Alternative

The CEQA *Guidelines* require EIRs to include a No Project Alternative for the purpose of allowing decision makers to compare the effects of approving the proposed project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the (up to) 44 MW PV solar facility on the 383-acre site would not occur. The No Project Alternative would not require a Conditional Use Permit (CUP) for construction and operation of a 44 MW solar, project battery energy storage, and associated facilities. 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 and Zoning Build-Out Alternative

Alternative 2, the General 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 designations and zoning classifications. The project site has a General Plan designation of 1.1 (State or Federal Land); 8.3 (Extensive Agriculture, 20-acre minimum); 8.5 (Resource Management, 20-acre minimum); and 8.3/2.1 (Extensive Agriculture/Seismic Hazard, 20-acre minimum/Seismic Hazard Combining Area). Additionally, the project site is located within the A WE (Exclusive Agriculture, Wind Energy); A GH (Exclusive Agriculture, Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); A (Exclusive Agriculture); and OS (Open Space) Zone Districts.

Implementation of Alternative 2 would consist of developing the project site under the current land use classifications of 1.1 (State or Federal Land); 8.3 (Extensive Agriculture, 20-acre minimum); 8.5 (Resource Management, 20-acre minimum); and 8.3/2.1 (Extensive Agriculture/Seismic Hazard, 20-acre minimum / Seismic Hazard Combining Area). According to the Kern County General Plan, the 1.1 (State or Federal Land) land use designation applies to all property under the ownership and control of the various state and federal agencies operating in Kern County (including, but not limited to, military, U.S. Forest Service, Bureau of Land Management (BLM), and U.S. Department of Energy). The 1.1 (State or Federal Land) land use designation onsite is federal land administered by the BLM. This area of the project site is located on a Development Focus Area as designated by the Desert Renewable Energy Conservation Area Plan (DRECP). Further details about the DRECP are provided in Section 11.4 (see Chapter 11, *Environmental Assessment*, of this EIR/EA). The 8.3 (Extensive Agriculture, 20-acre minimum) land use designation applies to agricultural uses involving large amounts of land with relatively low value per acre yields. Typical uses include livestock grazing, farming and woodlands. The minimum allowable parcel size in the 8.3 (Extensive Agriculture, 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 acres gross. 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 acres gross. The 8.3/2.1 (Extensive Agriculture/Seismic Hazard, 20-acre minimum/Seismic Hazard Combining Area) land use designation applies to Alquist-Priolo Special Study Zones and other recently active fault zones.

Given that the zoning designation for the project site is A WE (Exclusive Agriculture, Wind Energy); A GH (Exclusive Agriculture, Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); A (Exclusive Agriculture); and OS (Open Space) Zone Districts, the project site could be developed with agricultural uses and other activities compatible with agricultural uses. In addition, according to the DRECP, Development Focus Areas are available for solar, wind, and/or geothermal development. Agricultural uses are not permitted in Development Focus Areas. As such, solar facilities could be developed on the BLM-controlled land under this alternative. Therefore, this alternative assumes agricultural development on those areas of the project site with a land use designation of 8.3, 8.5, and 8.3/2.1 (totaling 150 acres) and solar development on those areas of the project site with a land use classification of 1.1 (totaling 233 acres). No CUPs for solar facility construction and operation would be required for this alternative.

## Alternative 3: Reduced Acreage Alternative

Alternative 3, the Reduced Acreage Alternative, would avoid an area of the project site that contains California Juniper Woodland. This area is located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres (see **Figure 6-1**). All project facilities would remain in the same locations as proposed under the project, including the proposed new 34.5 kV collector line, which would still be constructed on private land between the project site and the Manzana Project substation and the energy would be transferred to the SCE Whirlwind Substation using the existing Manzana Project 230 kV gen-tie line. The reduced project acreage under this alternative is still expected to contain enough land to construct a solar array field capable of generating 44 MW, which is the same generation output estimated for the proposed project. Similar to the proposed project, this alternative would require the approval of CUP No. 7, Map 216, for construction and operation of a commercial solar electrical generating facility.

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

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative, would involve the development of a number of geographically distributed small to medium solar PV systems (100 kWh to 1 MW) within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the 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 383 acres of total rooftop area) may be required to attain project's capacity of 44 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 44 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 proposed 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.

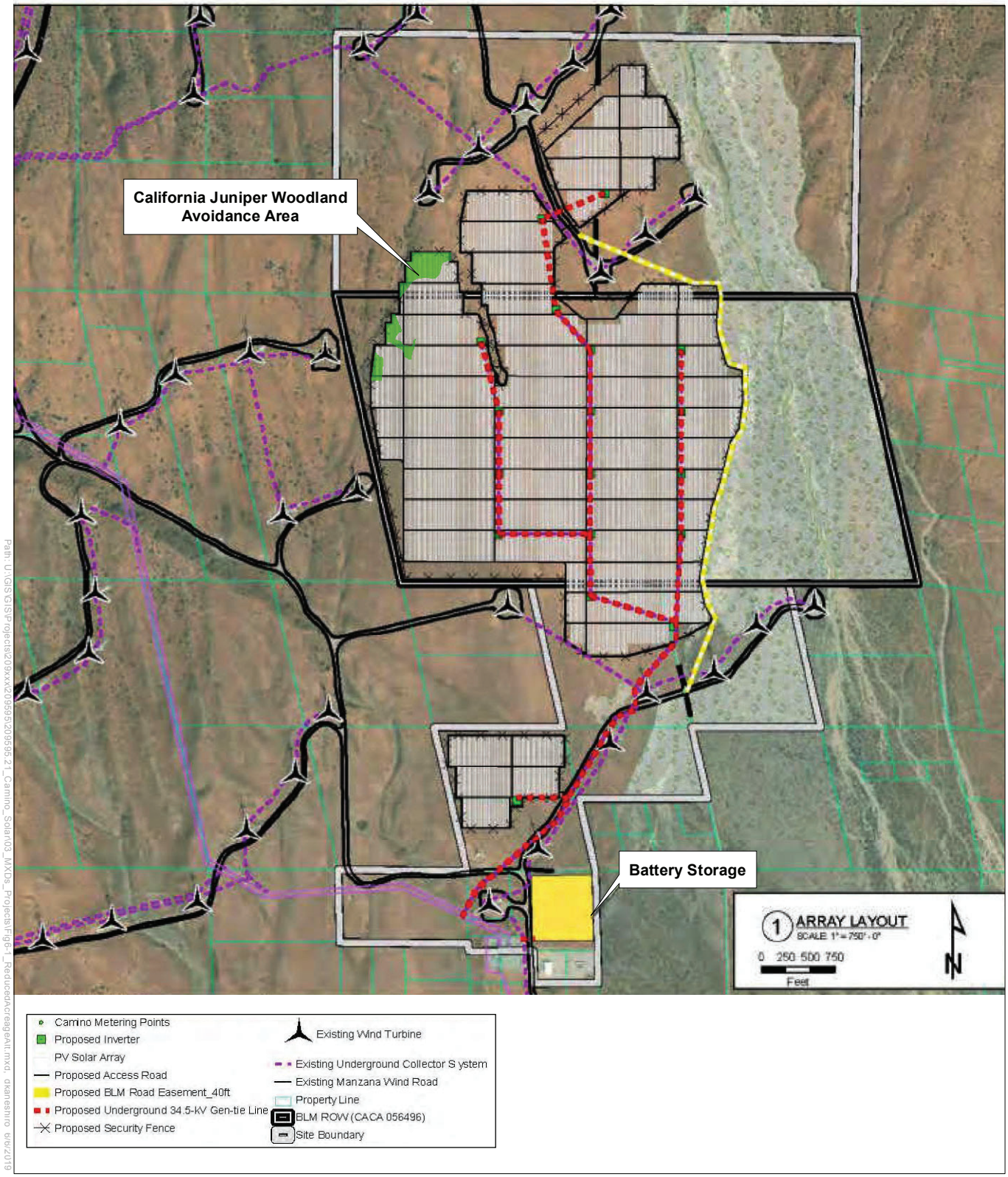


**Figure 6-1: REDUCED ACREAGE ALTERNATIVE**

**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 383 acres would generate up to 44 MW of electricity with battery storage and deliver it to the grid. Approval of Conditional Use Permit (CUP) for construction and operation of commercial solar electrical generating facilities would be required. | N/A |
| Alternative 1: No Project Alternative | No development would occur on the project site. The project site would remain unchanged. | • Required by CEQA<br>• Avoids need for CUP<br>• Avoids all significant and unavoidable impacts<br>• Greater impacts to GHGs<br>• Less impact in all remaining environmental issue areas<br>• Does not meet any of the project objectives. |
| Alternative 2: General Plan and Zoning Build-Out Alternative | Project site would be developed to the maximum intensity allowed under the Kern County General Plan land use designations and zoning classifications and other existing applicable restrictions. | • Avoids need for CUP<br>• Similar impacts to biological resources, mineral resources, and tribal cultural resources<br>• Less impact to aesthetics, agricultural and forestry resources, hazards and hazardous materials, and land use and planning<br>• Greater overall impacts in all remaining environmental issue areas<br>• Does not meet any of the project objectives. |
| Alternative 3: Reduced Acreage Alternative | Construction and operation of one solar facility on approximately 378.6 acres and would avoid an area of the project site that contains California Juniper Woodland. This alternative is still expected to contain enough land to construct a solar array field capable of generating 44 MW, which is the same generation output estimated for the proposed project. The project site would require a CUP approval. | • Similar impacts to energy, GHG emissions, hazards and hazardous materials, land use and planning, mineral resources, public services, transportation, tribal cultural resources, and utilities and service systems<br>• Less impact in all remaining environmental issue areas<br>• Meets all of the project objectives |

**TABLE 6-1: SUMMARY OF DEVELOPMENT ALTERNATIVES**

| Alternative | Description | Basis for Selection and Summary of Analysis |
|---|---|---|
| Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only | The construction of 44 MW of PV solar distributed on rooftops throughout the Antelope Valley. Electricity generated would be for onsite use only. | • Avoids need for CUP at the project site but may require other entitlements (such as a CUP or variance) on other sites<br>• Avoid significant and unavoidable impacts associated with aesthetics, air quality, biological resources, and wildfire<br>• Greater impacts to GHG emissions land use and planning, and noise<br>• Similar impacts to cultural resources, energy, mineral resources, and tribal cultural resources<br>• Less impact in all remaining issue areas<br>• Does not meet the project objectives, nor does this alternative account for the battery 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 (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/EA because they do not meet project objectives or were infeasible.

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

## 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, including carbon dioxide (GHG) after installation.
- 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 44 MW of power that the proposed project would produce, the alternative would require more space than what the project site current accommodates. Consequently, the project site would need to be expanded.

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

- It would substantially increase the significant aesthetic impacts associated with the project because wind turbines would be much taller than solar panels and more visible from many viewpoints.
- It may result in additional/greater biological resources impacts to avian species than the project.
- It may generate long-term noise impacts to nearby sensitive receptors from rotating turbine blades.

# Industrial Power Plant Alternative

This alternative would involve the development of a natural gas-fired power plant or plants (equivalent to 44 MW) in Kern County. Fossil fuel-powered plants are designed on a large scale for continuous operation. However, byproducts of industrial power plant operation need to be considered in both design and operation. When waste heat that results from the finite efficiency of the power cycle is not recovered and used as steam or hot water, it must be released to the atmosphere, and often uses a cooling tower as a cooling medium (especially for condensing steam). The flue gas from combustion of the fossil fuels is discharged to the air and contains carbon dioxide and water vapor as well as other substances, such as nitrogen, nitrogen oxides, and sulfur oxides. Furthermore, unlike the proposed project, fossil fuel-powered plants are major emitters of GHGs. In addition, industrial power plants generally involve the construction of large structures, such as cooling towers and gas stacks, as well as a large number of employees to operate the facility on a 24/7 basis 365 days a year. Accordingly, the development of an industrial power plant would typically result in greater adverse impacts related to: (1) aesthetics and the local visual setting of the project area; (2) air quality and GHG emissions; (3) land use and planning conflicts with the rural development of the

surrounding area; (4) noise from the plant operations; (5) traffic from increased employment at the facility; and (6) demand on public utilities, including water and waste disposal.

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

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

# Alternative Site

This alternative would involve the development of the proposed project on another site located within Kern County, other than constructing rooftop distributed generation systems. Although undetermined at this time, the alternative project site would likely be located in the Antelope Valley desert region of the County. This alternative is assumed to involve construction of a 44 MW PV solar facility on a site totaling 383 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 proposed project would be avoided or substantially lessened" in relocating the project, while remaining consistent with the same basic objectives of the proposed project.

The Antelope Valley has attracted renewable energy development applications that are being proposed for vacant land or land with a history of agricultural uses. The availability of alternative sites is constrained by the renewable energy market itself. While other sites with similar size, configuration, and use history may exist in the 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, wildfire, and biological resources. This is based on the known general conditions in the area and the magnitude of the proposed project.

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

# 6.6 Analysis Format

In accordance with CEQA *Guidelines* Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less, similar, or greater than the corresponding impacts of the proposed project. Furthermore, each alternative is evaluated to determine whether the project objectives identified in Chapter 3, *Project Description*, of this EIR/EA 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/EA.

b) Post-mitigation significant and less than significant environmental impacts of the alternative and the project are compared for each environmental issue area as follows:

   – Less: Where the impact of the alternative after feasible mitigation would be clearly less adverse than the impact of the project, the comparative impact is said to be "less."

   – Greater: Where the impact of the alternative after feasible mitigation would be clearly more adverse than the impact of the project, the comparative impact is said to be "greater."

   – Similar: Where the impacts of the alternative after feasible mitigation and the project would be roughly equivalent, the comparative impact is said to be "similar."

c) The comparative analysis of the impacts is followed by a general discussion of whether the underlying purpose for the project, as well as the project's basic objectives would be substantially attained by the alternative.

**Table 6-2,** *Comparison of Alternatives*, provides a summary and side-by-side comparison of the proposed project with the impacts of each of the alternatives analyzed. Please note that in Alternatives 1 through 4 in Table 6-2, the references to "less, similar, or greater," refer to the impact of the alternative compared to the proposed project, and the impacts "no impact (NI), less than significant (LTS), or significant and unavoidable (SU)," in the parentheses refer to the significant impact of the specific alternative.

**TABLE 6-2: COMPARISON OF ALTERNATIVES**

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

**TABLE 6-2: COMPARISON OF ALTERNATIVES**

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

NI = No Impact
LTS = Less Than significant
SU = Significant and Unavoidable

# 6.7 Impact Analysis

## 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. Therefore, there would be no impact and the No Project Alternative would result in less impact to aesthetics compared to the proposed project.

#### *Agricultural and Forestry Resources*

Under the No Project Alternative, the project site would remain undeveloped and solar panels would not be installed. The project site would remain in its current state, as undeveloped land containing desert vegetation. As such, the No Project Alternative would not involve changes to the existing environment which could result in the conversion of Farmland or forest land to non-agricultural or non-forest uses. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to agricultural and forestry resources compared to the proposed project.

#### *Air Quality*

Under the No Project Alternative, the project site would remain undeveloped and there would be no construction activities or operational activities that would generate air emissions. No exceedance of the EKAPCD's thresholds for PM10 would occur, 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 proposed project.

#### *Biological Resources*

Under the No Project Alternative, the project site would remain undeveloped and existing biological resources on the project site, including special-status plant and wildlife species, would remain undisturbed since no construction or operation would occur. The project site would remain in its current state, as undeveloped land containing desert vegetation, and would not contribute to a cumulative loss of foraging and nesting habitat for burrowing owls, Swainson's hawk, other raptors, desert kit fox, and migratory bird species that may utilize habitat on the project site. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to biological resources compared to the proposed project.

#### *Cultural Resources*

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. Therefore, disturbance to potential historical resources, archeological resources, or

human remains located 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 proposed project.

### *Energy*

Under the No Project Alternative, the project site would remain undeveloped and no energy consumption activities would occur. As such, the No Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to energy compared to the proposed project.

### *Geology and Soils*

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. As such, the No Project Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault or strong seismic ground shaking; result in substantial soil erosion or loss of topsoil; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. Therefore, there would be no impact and the No Project Alternative would result in fewer impact related to geology and soils compared to the proposed project.

### *Greenhouse Gas Emissions*

Under the No Project Alternative, emissions associated with construction and operation of a solar energy facility 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 proposed project as it would not offset GHG emissions.

### *Hazards and Hazardous Materials*

Under the No Project Alternative, the project site would remain undeveloped, and no construction or operational activities would occur. The project site would remain in its current condition. As such, this alternative would not involve use, transport, and disposal of hazardous materials associated with the project site; create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; or expose people or structures to significant risk of loss, injury, or death involving wildland fires. Therefore, there would no impact and the No Project Alternative would result in less impacts related to hazards and hazardous materials compared to the proposed project.

### *Hydrology and Water Quality*

Under the No Project Alternative, the project site's existing hydrology and water quality would remain unchanged as no development or ground disturbance would occur on the project site. As such, this alternative would not violate water quality standards or waste discharge requirements; substantially alter

the existing drainage patter of the site or area in a manner that would substantially increase the rate or amount of surface runoff which would result in flooding on- or offsite; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage system; contribute to inundation by a flood hazards, tsunami, or seiche; or conflict with or obstruct implementation of a water quality control plan or groundwater management plan. Therefore, there would be no impact and the No Project Alternative would result in less impact related to hydrology and water quality compared to the proposed project.

### *Land Use and Planning*

The No Project Alternative would not develop any new uses at the project site, and would thus not require a CUP. Current land uses on the site are consistent with the zoning and General Plan land use classifications. As such, the No Project Alternative would not cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, there would be no impact and the No Project Alternative would result in less impact related to land use and planning compared to the proposed project.

### *Mineral Resources*

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. There are no mineral resources on the project site or in the project area. As such, the No Project Alternative would not result in the loss of availability of locally important mineral resource recovery site delineated on a local General Plan, Specific Plan, or other land use plan. Therefore, there would be no impact and the No Project Alternative would result in less impact related to mineral resources compared to the proposed 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 proposed project.

### *Public Services*

Under the No Project Alternative, the project site would remain undeveloped and no new demand for fire or law enforcement services would occur. As such, the No Project Alternative would not result in the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and law enforcement. Therefore, there would be no impact and the No Project Alternative would result in less impact related to public services compared to the proposed project.

### *Transportation*

Under the No Project Alternative, the solar facilities would not be constructed and this alternative would not introduce construction and operational-related trips. Existing traffic patterns and volumes on nearby

roadways would remain unchanged. As such, the No Project Alternative would not conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities and not conflict or be inconsistent with CEQA *Guidelines* Section 15064.3, subdivision (b). Therefore, there would be no impact and the No Project Alternative would result in less impact related to transportation than the proposed project.

### *Tribal Cultural Resources*

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. 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 proposed project.

### *Utilities and Service Systems*

Under the No Project Alternative, the solar facilities would not be constructed and there would be no new demand for utilities and service systems on the project site. As such, the No Project Alternative would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; impact water supplies; generate solid waste in excess of State or local standards; or conflict with federal, state, and local management and reduction statues and regulations related to solid waste. Therefore, there would be no impact and the No Project Alternative would result in less impact related to utilities and service systems compared to the proposed project.

### *Wildfires*

Under the No Project Alternative, the solar facilities would not be constructed. As such, the No Project Alternative would not expose occupants to pollutant concentrations from a wildfire; require the installation or maintenance of associated infrastructure; or expose people or structures to significant risks. Therefore, there would be no impact and the No Project Alternative would result in less impact to risks associated with wildfires than the proposed project.

## Comparison of Impacts

The No Project Alternative would avoid creating all of the significant and unavoidable impacts associated with the proposed project. This alternative would result in less impact to all remaining environmental issue areas with the exception of GHGs; since this alternative would not offset GHGs through the operation of a solar energy facility, impacts to GHGs would be greater under this alternative.

## Relationship to Project Objectives

The No Project Alternative would not achieve any of the project objectives listed above in Section 6.2, *Project Objectives*, including assisting California in reducing GHG emissions. Although this alternative

would create less environmental impacts overall, the objectives that shape the project would not be realized under this alternative.

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

## Environmental Impact Analysis

### *Aesthetics*

Under the General Plan and Zoning Build-Out Alternative, 150 acres of the project site would be developed with agricultural uses involving large amounts of land with low value-per-acre yields, such as livestock grazing and dry land farming. The remaining 233-acre BLM-administered portion of the project site would be developed with solar facilities similar to those in the proposed project.

With regard to impacts related to scenic vistas, the quality of the existing scenic vista from both KOP 1 and KOP 6 is considered moderate to low given the existing visible solar facilities and wind turbines. As with the proposed project, the General Plan and Zoning Build-Out Alternative would not be visible from some other portions of the PCT and adjacent areas. Thus, given the moderate to low visual quality and existing visual obstructions, the General Plan and Zoning Build-Out Alternative would not have a substantial adverse effect on a scenic vista. Impacts would be less than significant.

Development of 150 acres 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. This alternative would also include the installation of solar panels on the 233-acre BLM-administered portion of the project site, which would result in less than significant aesthetic impacts. However, in combination with other projects, particularly the wind turbines and other solar development that exist near the project site, the General Plan and Zoning Build-Out Alternative would contribute to added cultural modifications in the project area. While implementation of Mitigation Measures MM 4.1-1 through MM 4.1-6 reduce aesthetics impacts, and other projects in the region would be required to implement similar mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. As such, cumulative impacts from the change to the visual character of the site would remain significant and unavoidable as the solar facility proposed under the General Plan and Zoning Build-Out Alternative would be reduced compared to the proposed project, the General Plan and Zoning Build-Out Alternative would have less impacts related to aesthetics compared to the proposed project.

### *Agriculture and Forestry Resources*

Under the General Plan and Zoning Build-Out Alternative, 150 acres of the project site would be developed with agricultural uses and other activities compatible with agricultural uses, as well as include the installation of solar panels on the 233-acre BLM-administered portion of the project site. Under this alternative, for those areas of the project site that would be developed with agricultural uses, there would be no impacts related to changes in the existing environmental which could result in conversion of Farmland to non-agricultural uses or conversion of forest land to non-forest uses. The 233-acre BLM-administered portion of the project site would be developed with a solar facility and associated infrastructure and, thus, would create changes in the existing environment that would convert land that is designated for grazing to non-agricultural use. Similar to the proposed project, while implementation of the General Plan and Zoning

Build-Out Alternative would preclude livestock grazing onsite, it would only result in loss of 3 percent of the entire Antelope Valley allotment. In addition, the project site is not currently used for grazing.

Impacts to agriculture and forestry resources would still be less than significant with implementation of similar mitigation proposed for the proposed project. As the General Plan and Zoning Build-Out Alternative would include the installation of fewer solar panels as compared to the proposed project, impacts related to agriculture and forestry resources would be less than those of the proposed project.

### *Air Quality*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. The conversion of the project site to agricultural uses would require similar heavy equipment to the proposed project. In addition, for the installation of solar panels, the use of construction vehicles, heavy equipment operation, and worker carpool trips on a daily basis would also be similar to the proposed project. Thus, similar to the proposed project, this alternative would require implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4 in order to reduce the severity of construction-related emissions. However, similar to the proposed 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 and Zoning Build-Out Alternative would be greater due to routine emissions associated with agricultural vehicles, livestock emissions, etc. In addition, with regard to the BLM-administered portion of the project site, operational emissions would likely be similar under this alternative as the same amount of maintenance trips would be required for the proposed solar facilities. 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 General 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 proposed project, impacts would be significant and unavoidable.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations. In particular, during construction of this alternative, it is possible that onsite workers could be exposed to Valley Fever as fugitive dust is generated during construction. However, dust-minimizing techniques and financial contribution to Valley Fever public awareness, as implemented through Mitigation Measure MM 4.3-3 and MM 4.3-4, would reduce these impacts to less than significant. As with the proposed project, the General Plan and Zoning Build-Out Alternative would result in less-than-significant impacts related to toxic air contaminants, localized pollutant concentrations, and asbestos.

Overall, even with implementation of similar mitigation proposed for the project, impacts to air quality under the General Plan and Zoning Build-Out Alternative would likely remain significant and unavoidable and result in greater overall impacts to air quality than the proposed project due to the greater operational emissions associated with the agricultural uses.

### *Biological Resources*

Under the General Plan and Zoning Build-Out Alternative, the currently undeveloped project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered

portion of the project 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. With regard to the BLM-administered portion of the project site, while this portion of the project site would retain vegetation and existing drainage patterns and would not increase human presence, impacts to birds from the potential solar panel lake effect and impacts to wildlife movement would continue to occur under this alternative and would have similar impacts as the proposed project.

In particular, as it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, as with the proposed project, the General Plan and Zoning Build-Out Alternative would have an impact to Robbins' nemacladus, Joshua trees, silver cholla, and beavertail cactus as well as golden eagle California condors, burrowing owls, loggerhead shrike, Swainson's hawk, and desert kit fox, migratory birds, Coast horned lizard, northern California legless lizard, Tulare grasshopper mouse, Tehachapi pocket mouse, San Joaquin pocket mouse, American badger, and southern grasshopper mouse. With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13, impacts would be reduced to less than significant.

With regard to impacts on any riparian habitat or other sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS, construction activities could result in significant impacts related to scale broom scrub, a riparian or wetland area east of the project site as well as jurisdictional features to ephemeral drainages within the project site. However, as with the proposed project, implementation of Mitigation Measures MM 4.4-11 through MM 4.4-13 and MM 4.7-4 would reduce impacts to less than significant under the General Plan and Zoning Build-Out 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 General Plan and Zoning Build-Out Alternative, as with the proposed project, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

Based on the above, project-level impacts under the General Plan and Zoning Build-Out Alternative would be less than significant with implementation of mitigation and similar to those of the proposed project. However, cumulatively, this alternative would still result in significant and unavoidable impacts to biological resources; regardless of the type of development, biological resources are being impacted throughout the Antelope Valley. Therefore, the General Plan and Zoning Build-Out Alternative would result in similar impacts related to biological resources when compared to the proposed project.

### *Cultural Resources*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. While installation of solar panels would involve similar ground disturbance as compared to the proposed project, to convert portions of the project site to agricultural uses, this alternative would involve greater ground disturbance as opposed to the proposed project that would have some no build areas.

While no historical or archaeological resources were identified, ground-disturbing activities associated with the proposed project have the potential to encounter undocumented archaeological resources that could qualify as historical resources. Similar to the proposed project, the General Plan and Zoning Build-Out Alternative would implement Mitigation Measures MM 4.5-1 and MM 4.5-2. 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 4.5-3 would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, although both the proposed project and this alternative would result in less-than-significant impacts with mitigation as it relates to historical resources, archaeological resources, and human remains, the General Plan and Zoning Build-Out Alternative would result in greater cultural resource impacts compared to the proposed project as greater ground disturbance required under this alternative could affect undocumented subsurface cultural resources.

### *Energy*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. The portions of the project site that would be developed with agricultural uses would require less-intensive construction and operational activities related to the consumption of natural gas and transportation-related energy (petroleum-based fuels) and less-intensive construction activities related to electricity usage. However, greater operational electricity usage associated with the greater consumption of water associated with the proposed agricultural uses would occur. Overall, the agricultural uses would require less energy consumption. However, the installation of solar panels on the BLM-administered portion of the project site would result in similar construction and operational activities as compared to the proposed project, but to a lesser extent, as this alternative would require the installation of fewer solar panels as compared to the proposed project. Similar to the proposed project, the General Plan and Zoning Build-Out Alternative would implement Mitigation Measure MM 4.3-1, as provided in Section 4.3, *Air Quality*, of this EIR, which would require the use of energy-efficient and alternatively fueled equipment and ensure compliance with Title 13, California Code of Regulations, Section 2449 et seq., which imposes construction equipment idling restrictions. As such, the wasteful, inefficient, or unnecessary consumption of energy resources would be similar to the proposed project. In addition, similar to the proposed project, the 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 and Zoning Build-Out Alternative related to energy would be less than significant, but greater than those of the proposed project as the project site would not generate as much renewable energy as compared to the proposed project, and would therefore, not assist the state in meeting its renewable energy generation goals to the fullest extent as compared to the proposed project.

### *Geology and Soils*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. Given the larger footprint of the agricultural

development compared to the proposed project (that would include some no-build areas), this alternative would result in greater initial soil disturbance during construction.

Similar to the proposed project, the General Plan and Zoning Build-Out Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault. With regard to seismic ground shaking, similar to the proposed project, the General Plan and Zoning Build-Out Alternative would implement Mitigation Measures MM 4.7-1 and MM 4.7-2 to ensure that effects from strong seismic ground shaking would be minimized. As with the proposed project, pre-construction activities under the General Plan and Zoning Build-Out Alternative, including vegetation and debris removal, grading, excavation and trenching, have the potential to result in significant impacts related to erosion, sedimentation, and discharge of construction debris from the site. As such, the General Plan and Zoning Build-Out Alternative would implement Mitigation Measures MM 4.7-3 and 4.7-4 to reduce these potential impacts to less than significant. As it relates to unique paleontological resource or site or unique geologic feature, similar to the proposed project, under the General Plan and Zoning Build-Out Alternative any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. As such, the General Plan and Zoning Build-Out Alternative would implement Mitigation Measure MM 4.7-5 through MM 4.7-7 to reduce impacts to paleontological resources.

As discussed above, with implementation of mitigation similar to that required for the proposed project, impacts to geology and soils would likely be less than significant. However, impacts to geology and soils would be slightly greater under this alternative compared to the proposed project as the General Plan and Zoning Build-Out Alternative would result in greater initial soil disturbance during construction.

### *Greenhouse Gas Emissions*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. As a solar facility, operation of the proposed project would offset GHG emissions generated by other petroleum-based sources of energy, thus resulting in a net decrease of GHG emissions within California. Conversely, as portions of the General Plan and Zoning Build-Out Alternative would develop land uses that would emit GHG emissions throughout the life of the proposed project (from increased water usage, traffic, operation of agricultural equipment, and livestock emissions) with only a small portion of project site that would include the installation of solar panels, this would result in a net gain of GHG emissions within California. Unlike the proposed project, the General 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 proposed 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 proposed project since the beneficial reduction in GHG emissions would not occur to the same extent as the proposed project.

### *Hazards and Hazardous Materials*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. There are no known hazardous materials in the soil that would be disturbed during construction of either the agricultural uses or solar facilities. Agricultural uses on the project site could require the use of hazardous materials during operation including herbicides and pesticides. In addition, similar to the proposed project, the proposed solar facilities under this alternative

would require the use of hazardous materials such as fuel and chemicals during construction, decommissioning, and occasionally during operation. Similar to the proposed project, the General Plan and Zoning Build-Out Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2 and MM 4.17-2 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation, including the use of pesticides and herbicides; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Implementation of these mitigation measures would reduce impacts related to a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As it relates to wildland fires, the project site is not within an area of high or very high fire hazard. However, similar to the proposed project, the General Plan and Zoning Build-Out Alternative would include a battery 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 proposed project in the event of a fire on the project site.

Impacts under the General Plan and Zoning Build-Out Alternative and the project would result in less-than-significant impacts after implementation of mitigation measures and the potential impacts from hazards and hazardous materials would be similar to those of the proposed project.

### *Hydrology and Water Quality*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site, which could alter the landscape and drainage patterns of the project site. Similar to the proposed project, the agricultural development and solar facilities would not substantially increase impervious surfaces. Conversion of the project site to agricultural uses and installation of the proposed solar panels would likely result in similar ground disturbance and erosion potential. However, operation of the agricultural uses proposed under this alternative would likely involve continued ground disturbance from activities such as grazing and plowing, whereas the proposed project's operation would not; thereby, posing a greater threat to water quality. Operation of agricultural uses could also affect groundwater quality through the application of pesticides or herbicides.

Similar to the proposed project, the General Plan and Zoning Build-Out Alternative would include completion of a NPDES completion form as well as implementation of Mitigation Measure MM 4.9-1 in order to reduce potential impacts related to violating water quality standards or degradation of surface or groundwater quality during construction and operation of the General Plan and Zoning Build-Out Alternative. As it relates to groundwater supplies, water requirements under the General Plan and Zoning Build-Out Alternative, similar to the proposed project, would be relatively small and would represent a small portion of the established safe yield of the basin, and would not substantially deplete groundwater levels in comparison to existing conditions. As such, impacts would be less than significant.

With regard to existing drainage patterns, installation of the facilities required under the General 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 proposed project, the General Plan and Zoning Build-Out Alternative would: (1) ensure that the retention basins and other stormwater management features are consistent with existing regulatory

requirements and can minimize any erosion or sedimentation to less-than-significant levels; (2) ensure that flooding on- or offsite is reduced to less-than-significant levels; and (3) minimize potential increases in stormwater flow and other project-induced changes to drainage patterns to less-than-significant levels.

The project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards and impacts would be less than significant. In addition, water for construction and operation phases under the General Plan and Zoning Build-Out Alternative would be obtained from a nearby well or trucked onto the site from a local purveyor and would be subject to the requirements of the adjudicated basin management. Therefore, the proposed project would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Overall, although both the proposed project and this alternative would result in less-than-significant impacts with the implementation of mitigation, the General Plan and Zoning Build-Out Alternative would result in greater impacts to hydrology and water quality compared with the proposed project as operation of the agricultural uses proposed under this alternative would likely involve continued ground disturbance from activities such as grazing and plowing.

### *Land Use and Planning*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses in accordance with the project site's zoning of A WE (Exclusive Agriculture, Wind Energy); A GH (Exclusive Agriculture, Geological Hazard); A GH WE (Exclusive Agriculture, Geological Hazard, Wind Energy); A (Exclusive Agriculture); and OS (Open Space) Zone Districts. In addition, according to the DRECP, Development Focus Areas are available for solar, wind, and/or geothermal development. Agricultural uses are not permitted on Development Focus Areas. As such, solar facilities could be developed under this alternative. Unlike the proposed project, the General 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 and Zoning Build-Out Alternative would result in less impact related to land use and planning compared to the proposed project.

### *Mineral Resources*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. The establishment of agricultural uses and solar facilities onsite would have a similar potential as the proposed project to impact the future extraction of mineral resources on adjacent lands. The proposed project would result in less-than-significant impacts to mineral resources; therefore, the General Plan and Zoning Build-Out Alternative would result in similar impacts to mineral resources compared to the proposed project.

### *Noise*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. During construction, impacts under this

alternative would be similar to the impacts of the proposed project, as the conversion of the project site to agricultural uses would require similar heavy equipment as required for the construction of the proposed project. In addition, for the installation of solar panels, the use of construction vehicles, heavy equipment operation, and worker carpool trips would also be similar to the proposed project. During operation, with regard to the proposed agricultural uses, this alternative would generate greater noise than the proposed project associated with the daily operation of agricultural equipment and worker vehicles. Impacts from the operation of solar facilities would be similar to those of the proposed project.

Under this alternative, similar to the proposed project, construction and operational activities 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 6,336 feet from construction activities. As such, the vibration levels at the nearest residences would not reach the vibration level threshold for older residential structures. Operation of the General Plan and Zoning Build-Out Alternative would involve mostly regular maintenance trucks accessing the project site, panel washing activities, and agricultural equipment use that would be a sufficient distance from structures (i.e., over 100 feet away from 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, although both the proposed project and this alternative would result in less-than-significant impacts, the General Plan and Zoning Build-Out Alternative would result in greater permanent noise impacts than the proposed project due to the proposed agricultural uses which involve an increase use of agricultural equipment during operation of the alternative.

### *Public Services*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. The proposed agricultural uses would increase the need for public services, including fire and law enforcement, in an area that is not currently serviced. However, impacts from the operation of solar facilities would be similar to those of the proposed project.

In particular, similar to the proposed project, construction of the General Plan and Zoning Build-Out Alternative would result in a similar number of construction workers on the project site and increased fire service demands would occur during construction of this alternative. However, the General Plan and Zoning Build-Out Alternative would implement Mitigation Measure MM 4.14-1, which would require the implementation of a fire safety plan. During operation, the portion of the project site that would be developed with agricultural uses could result in a slight increase in long-term population, while the BLM-administered portion of the project site would not require any additional employees to be onsite on a permanent basis. Similar to the proposed project, the General Plan and Zoning Build-Out 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 law enforcement, while the project site is located in an area that 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 proposed project. With regard to the agricultural uses, there would be no construction-related traffic for the conversion of the project site to agricultural uses. The increase in traffic related to installation of solar panels would be temporary and thus would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. In addition, chain-link security fencing would be installed around the site perimeter and other areas requiring controlled access during construction. During operation of this alternative, 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 both this alternative and the proposed project would result in less-than-significant impacts with implementation of mitigation, the General Plan Build-Out Alternative would result in greater impacts to public services compared to the proposed project due to proposed agricultural uses, which could result in a slight increase in long-term population.

### *Transportation*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. With regard to the agricultural uses, there would be no construction-related traffic for the conversion of the project site to agricultural uses. However, construction traffic for installation of the solar panels would be similar to the proposed project on a daily basis. Once operational, the General Plan and Zoning Build Out Alternative would involve more routine vehicle trips associated with agricultural uses. However, similar to the proposed project, vehicle trips associated with the proposed solar facilities would be minimal and would occur occasionally.

Similar to the proposed project, during construction of the General Plan and Zoning Build-Out 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 C conditions or better. During operation of this alternative, day to day operations and maintenance trips BLM-administered portion of the project site would be similar to those of those of the propose project. However, the agricultural uses proposed under the General Plan and Zoning Build-Out Alternative would involve more routine vehicle trips. Similar to the proposed project, the total number of daily trips for both the proposed agricultural uses and 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, subdivision (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, subdivision (b) would be less than significant under the General Plan and Zoning Build-Out Alternative, as with the proposed project.

Therefore, although both this alternative and the proposed project would result in less-than-significant impacts, impacts to transportation from the General Plan Build-Out Alternative would be greater when compared to those of the proposed project as operational agricultural uses would increase the amount of trips to the project site as compared to the proposed project.

### *Tribal Cultural Resources*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project 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 and Zoning Build-Out Alternative would be similar to the proposed project.

### *Utilities and Service Systems*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. While the proposed solar facilities would increase impervious surfaces, as with the proposed project, the proposed agricultural uses would not likely increase impervious surfaces compared to the proposed project. In addition, water demand from the proposed agricultural uses would increase substantially in comparison to the proposed 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 proposed project, conversion of the project site to agricultural uses and installation of solar panels would both 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 and Zoning Build-Out Alternative would not substantially alter stormwater drainage. With regard to operation, while the solar panels installed under the General Plan and Zoning Build-Out Alternative would require a similar water demand as the proposed project, the agricultural uses would substantially increase water demand. Wastewater and solid waste generation associated with this alternative would also slightly increase compared to the proposed project due to the increase in the number of employees associated with the agricultural uses. As the General Plan and Zoning Build-Out Alternative would not develop the project site, impervious surfaces would be minimized as much as possible, as with the proposed project. Similar to the proposed project, the General Plan and Zoning Build-Out Alternative would implement Mitigation MM 4.10-1, would include measures to offset increases in stormwater runoff caused by the proposed project and would further reduce impacts.

Although both the proposed project and this alternative would result in less-than-significant impacts, the General Plan and Zoning Build-Out Alternative would result in greater impacts to utilities and service systems compared to the proposed project as this alternative would have an increased demand on the water supply and local landfills compared to the proposed project due to the proposed agricultural uses.

### *Wildfires*

Under the General Plan and Zoning Build-Out Alternative, the project site would be developed with agricultural uses as well as include the installation of solar panels on the BLM-administered portion of the project site, located in the central portion of the project site. Impacts related to wildfires for the BLM-administered portion of the project site would be similar to the impacts generated by the proposed project as they propose similar uses. However, the proposed agricultural uses may introduce additional sources of vegetation, which may serve as fuel and exacerbate wildfire risks. Additionally, the use of the project site

for agriculture would result in an increase of employees on the project site, which would further increase potential impacts from wildfire risks. Similar to the proposed project, the General Plan and Zoning Build-Out Alternative would implement Mitigation Measure MM 4.14-1, which would require the development and implementation of a Fire Safety Plan for use during construction, operation, and decommissioning of the proposed project, which would further reduce the fire risks onsite. With regard to the installation or maintenance of associated infrastructure, agricultural uses would not require any installation of associated infrastructure, however, solar panels would require installation of the electrical collector line, similar to the proposed project. The installation of the electrical collector line would not be placed within a high fire hazard zone and the vegetation would be cleared and thus would not result in increased fire risks that could result in temporary or ongoing impacts to the environment. Similar to the proposed project, the General 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, with implementation of similar mitigation as proposed for the proposed project, impacts would remain less than significant under this alternative as it relates to wildfire impacts. However, the General Plan and Zoning Build-Out Alternative would have greater impacts from risks associated with wildfires than the proposed project due to the agricultural uses proposed under this alternative.

With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the General Plan and Zoning Build-Out Alternative and related projects have the potential to result in a cumulative impact related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

## Comparison of Impacts

The General Plan and Zoning Build-Out Alternative would result in less impact to aesthetics, agricultural and forestry resources, and land use and planning. The alternative would result in similar impacts to biological resources, hazards and hazardous materials, mineral resources, and tribal cultural resources. This alternative would result in greater impacts in all remaining environmental issue areas. Greater impacts to air quality would result from emissions from the proposed agricultural uses onsite, such as agricultural vehicles and livestock emissions. Given the ground disturbance required, greater impacts would occur to potentially undiscovered cultural resources. This alternative would result in greater energy impacts as the project site would not generate as much renewable energy as compared to the proposed project, and would therefore, not assist the state in meeting its renewable energy generation goals to the fullest extent as compared to the proposed project. Greater impacts to geology and soils would result from greater initial soil disturbance during construction and greater potential to expose people to seismic hazards resulting from permanent human presence onsite from the proposed agricultural uses. This alternative would result in greater GHG emission impacts than the proposed project because the potential offset or displacement of GHG emissions from operation of the solar power generating facility, compared with traditional gas- or coal-fired power plants, would not be realized. Greater impacts to hydrology and water quality would result from continued ground disturbance from activities such as grazing and plowing and the application of pesticides or herbicides from the proposed agricultural uses. Greater impacts to noise would occur under this alternative during operation, through the noise associated with the daily operation of agricultural equipment and worker vehicles. The increase in human population onsite is also responsible for greater

impacts to public services, transportation, utilities and service systems, and wildfires. This alternative would not eliminate significant and unavoidable impacts associated with aesthetics (cumulative only), air quality (project and cumulative), wildfire (cumulative only), and biological resources (cumulative only).

## Relationship to Project Objectives

The General Plan and Zoning Build-Out Alternative would not achieve the proposed project objectives listed above in Section 6.2 to the same extent as the proposed project, including the proposed project objective related to developing solar 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.

# Alternative 3: Reduced Acreage Alternative

## Environmental Impact Analysis

### *Aesthetics*

Under the Reduced Acreage Alternative, the proposed project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres.

With regard to impacts related to scenic vistas, the quality of the existing scenic vista from both KOP 1 and KOP 6 is considered moderate to low given the existing visible solar facilities and wind turbines. As with the proposed project, the Reduced Acreage Alternative would not be visible from some other portions of the PCT and adjacent areas. Thus, given the moderate to low visual quality and existing visual obstructions, the Reduced Acreage Alternative would not have a substantial adverse effect on a scenic vista. Impacts would be less than significant.

With regard to degrading the existing visual character of the site, similar to the project, visual impacts associated with construction would be temporary and would not be viewed from publicly accessible vantage points, and due to its collocation with an existing wind project, impacts would remain less than significant under the Reduced Acreage Alternative.

While this alternative would avoid development of a portion of the project section, this alternative would also include the installation of solar panels. Similar to the proposed project, the Reduced Acreage Alternative would similarly implement Mitigation Measures MM 4.1-1 through MM 4.1-6, which would reduce impacts to visual character and quality to the maximum extent feasible by requiring the preparation of a Maintenance, Trash Abatement, and Pest Management Program, requiring color-treating project facilities, including gen-tie poles, array facilities, etc. to blend in with the colors found in the natural landscape to reduce color disharmony, and requiring preparation of a revegetation plan during construction and decommissioning. However, in combination with other projects, particularly the wind turbines and other solar development that exist near the project site, the Reduced Acreage Alternative would contribute to added cultural modifications in the project area. While Mitigation Measures MM 4.1-1 through MM 4.1-6 to reduce aesthetics impacts would be implemented, and other projects in the region would be required to implement similar mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. As such, similar to the proposed project, cumulative impacts from the change to

the visual character of the site would remain significant and unavoidable for the Reduced Acreage Alternative. Impacts to visual character on the Reduced Acreage Alternative site would still be significant and avoidable. However, due to the reduction in project site size, the Reduced Acreage Alternative would have less impact to aesthetics.

### *Agriculture and Forestry Resources*

Under the Reduced Acreage Alternative, the proposed project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. The proposed 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 that would convert land that is designated for grazing to non-agricultural use. Similar to the proposed project, while implementation of the Reduced Acreage Alternative would preclude livestock grazing onsite, it would only result in loss of 3 percent of the entire Antelope Valley allotment. In addition, the project site is not currently used for grazing.

Impacts to agriculture and forestry resources would still be less than significant. As the Reduced Acreage Alternative would include a slightly smaller footprint, impacts related to agriculture and forestry resources would be less than those of the proposed project.

### *Air Quality*

Under the Reduced Acreage Alternative, the proposed project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 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 proposed project, but grading and other construction activities would not occur on the northwestern most portions of the site. Similar to the proposed project, this alternative would require implementation of Mitigation Measures MM 4.3-1 through MM 4.3-4in order to reduce the severity of construction-related emissions. However, similar to the proposed project, impacts would remain significant and unavoidable for project-level and cumulative construction impacts. Operational emissions would likely be similar under this alternative as the same amount of maintenance trips would be required. 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 proposed project, impacts would be significant and unavoidable.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations. In particular, during construction of this alternative, it is possible that onsite workers could be exposed to Valley Fever as fugitive dust is generated during construction. However, dust-minimizing techniques and financial contribution to public awareness programs, as implemented through Mitigation Measures MM 4.3-3 and MM 4.3-4, would reduce these impacts to less than significant. As with the proposed project, the Reduced Acreage Alternative would result in less-than-significant impacts related to toxic air contaminants, localized pollutant concentrations, and asbestos.

Overall, even with implementation of similar mitigation proposed for the proposed project, impacts to air quality under this alternative would likely remain significant and unavoidable, despite resulting in a minor reduction in emissions due to reduced grading footprint under this alternative. The Reduced Acreage Alternative would result in less overall impacts related to air quality than the proposed project.

### *Biological Resources*

As it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, as with the proposed project, the Reduced Acreage Alternative would have an impact to Robbins' nemacladus, Joshua trees, silver cholla, and beavertail cactus as well as golden eagle California condors, burrowing owls, loggerhead shrike, Swainson's hawk, and desert kit fox, migratory birds, Coast horned lizard, northern California legless lizard, Tulare grasshopper mouse, Tehachapi pocket mouse, San Joaquin pocket mouse, American badger, and southern grasshopper mouse. With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13, impacts would be reduced to less than significant. However, as the Reduced Acreage Alternative would avoid disturbing California Juniper Woodland located within the northwest portion of the project site, the suitable habitat for the California Juniper Woodland would be maintained and would directly reduce the project's 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 scale broom scrub, a riparian or wetland area east of the project site as well as jurisdictional features to ephemeral drainages within the project site. However, as with the proposed project, implementation of Mitigation Measures MM 4.4-14 through MM 4.4-13 and MM 4.7-4 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 proposed project, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

Based on the above, project-level impacts under the Reduced Acreage Alternative would be less than significant with implementation of mitigation and similar to those of the proposed project. However, cumulatively, this alternative would still result in significant and unavoidable impacts to biological resources; regardless of the type of development, biological resources are being impacted throughout the Antelope Valley. However, as this alternative would avoid disturbing California Juniper Woodland located within the northwest portion of the project site, the Reduced Acreage Alternative would result in less impact related to native plant communities when compared to the proposed project. All other impacts related to biological resources would remain the same as the proposed project.

### *Cultural Resources*

Under the Reduced Acreage Alternative, the proposed project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres.

While no historical or archaeological resources were identified, ground-disturbing activities associated with the proposed project have the potential to encounter undocumented archaeological resources that could qualify as historical resources. Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.5-1 and MM 4.5-2. 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 4.5-3 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 proposed project, impacts to cultural resources under this alternative would be less than significant. However, the Reduced Acreage Alternative would result in less impacts related to cultural resources compared to the proposed project due to the reduction in ground disturbance required under this alternative.

### *Energy*

Under the Reduced Acreage Alternative, the proposed project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. Eliminating 4.4 acres from project development would not result in reduced energy use, as the Reduced Acreage Alternative would still generate 44 MW of energy and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be the same as described under the proposed project. Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.3-1, which would require the use of energy-efficient and alternatively fueled equipment and ensure compliance with Title 13, California Code of Regulations, Section 2449 et seq., which imposes construction equipment idling restrictions. As such, the wasteful, inefficient, or unnecessary consumption of energy resources would be similar to the proposed project. Similar to the proposed project, this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be less than significant. The Reduced Acreage Alternative would result in similar energy impacts compared to the proposed project.

### *Geology and Soils*

Under the Reduced Acreage Alternative, the proposed project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres, and thus there would be less potential for erosion and exposure to geologic hazards.

Similar to the proposed project, the Reduced Acreage Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault. With regard to seismic ground shaking, similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.7-1 and MM 4.7-2 to ensure that effects from strong seismic ground shaking would be minimized. As with the proposed project, pre-construction activities under the Reduced Acreage Alternative, including vegetation and debris removal, grading, excavation and trenching, have the potential to result in significant impacts related to erosion, sedimentation, and discharge of construction debris from the site. As such, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.7-3 and 4.7-4 to reduce these potential impacts to less than significant. As it relates to unique paleontological resource or site or unique geologic feature, similar to the proposed project, under the Reduced Acreage Alternative any ground disturbance within the project site could result in a potentially significant impact to

paleontological resources. As such, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.7-5 through MM 4.7-7 to reduce impacts to paleontological resources.

As discussed above, with implementation of mitigation similar to that required for the proposed project, impacts to geology and soils would likely be less than significant. However, impacts to geology and soils would 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 proposed project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. Despite having a smaller project footprint than the proposed project, the construction and operational impacts from the Reduced Alternative would remain similar to the proposed project. Therefore, the Reduced Acreage Alternative would result in similar GHG emissions during construction and operations when compared with the proposed project. Additionally, the reduction in project area would not alter the site's ability to generate the proposed 44 MW in generating capacity and impacts would be less than significant. Therefore, the Reduced Acreage Alternative would result in similar overall impacts related to GHG emissions compared to the proposed project.

### *Hazards and Hazardous Materials*

Under the Reduced Acreage Alternative, the proposed project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres.

Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2 and MM 4.17-2 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation, including the use of pesticides and herbicides; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Implementation of these mitigation measures would reduce impacts related to a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As it relates to wildland fires, the project site is not within an area of high or very high fire hazard. However, similar to the proposed project, the Reduced Acreage Alternative would include a battery 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 proposed project would result in less-than-significant impacts after implementation of mitigation measures and the potential impacts from hazards and hazardous materials under the Reduced Acreage Alternative would be similar to those of the proposed project.

### *Hydrology and Water Quality*

Under the Reduced Acreage Alternative, the project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. The reduced footprint would result in slightly reduced grading activities and would reduce the amount of impervious surfaces compared to the proposed project.

Similar to the proposed project, the Reduced Acreage Alternative would include completion of a NPDES completion form as well as implementation of Mitigation Measure MM 4.9-1 in order to reduce potential impacts related to violating water quality standards or degradation of surface or groundwater quality during construction and operation of the Reduced Acreage Alternative. As it relates to groundwater supplies, water requirements under the Reduced Acreage Alternative, similar to the proposed project, would be relatively small and would represent a small portion of the established safe yield of the basin, and would not substantially deplete groundwater levels in comparison to existing conditions. As such, impacts would be less than significant.

With regard to existing drainage patterns, installation of the facilities required under the Reduced Acreage Alternative would alter existing onsite drainage patterns and flowpaths to some degree, and could alter the way that stormwater from upgradient flows across the project site during major events. Similar to the proposed project, the Reduced Acreage Alternative would: (1) ensure that the retention basins and other stormwater management features are consistent with existing regulatory requirements and can minimize any erosion or sedimentation to less-than-significant levels; (2) ensure that flooding on- or offsite is reduced to less-than-significant levels; and (3) minimize potential increases in stormwater flow and other project-induced changes to drainage patterns to less-than-significant levels.

The project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards and impacts would be less than significant. In addition, water for construction and operation phases under the Reduced Acreage Alternative would be obtained from a nearby well or trucked onto the site from a local purveyor and would be subject to the requirements of the adjudicated basin management. Therefore, the project would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Overall, impacts related to hydrology and water quality would be less than significant. However, the Reduced Acreage Alternative would have slightly less impact related to hydrology and water quality compared to the proposed project due to the reduced footprint, which would result in slightly reduced grading activities and would reduce the amount of impervious surfaces compared to the proposed project.

### *Land Use and Planning*

Under the Reduced Acreage Alternative, the project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. Nevertheless, development of the Reduced Acreage Alternative alone would still require a CUP to operate a solar facility on the project site. Impacts would be less than significant under this alternative. Land use and planning impacts would similar under the Reduced Acreage Alternative when compared to the project.

### *Mineral Resources*

Under the Reduced Acreage Alternative, the project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. There are no identified mineral resources on the project site. Therefore, there would be no impact. The Reduced Acreage Alternative would result in similar impacts to mineral resource compared to the proposed project.

### *Noise*

Under the Reduced Acreage Alternative, the project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be the same as described under the proposed project.

Under this alternative, similar to the proposed project, construction and operational activities 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 6,336 feet from construction activities. 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 propose project, that would be a sufficient distance from structures (i.e., over 100 feet away from structures). A such, vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers.

This alternative is expected to result in less than significant noise impacts 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 avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be the same as described under the proposed project.

Similar to the proposed project, construction of the Reduced Acreage Alternative would result in a similar 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 law enforcement, 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 proposed project. The increase in traffic would be temporary and thus would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. In addition, chain-link security fencing would be installed around the site perimeter and other areas requiring controlled access during construction. During operation of this alternative, the additional volume of vehicles associated with workers commuting to the project site during routine maintenance would be minor and is not expected to adversely affect traffic. Therefore, the increase is not likely to have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

Based on the above, impacts would be less than significant under this alternative following implementation of similar mitigation measures proposed for the project and impacts related to public services would be similar to those of the proposed project.

### *Transportation*

Under the Reduced Acreage Alternative, the project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. Eliminating 4.4 acres from project development would not result in reduced traffic or vehicle trips, as the Reduced Acreage Alternative would still generate 44 MW of energy and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be the same as described under the proposed project.

Similar to the proposed project, during construction of the Reduced Acreage Alternative, which would require similar construction trips for installation of the solar panels, all study roadway segments are forecasted to operate at Caltrans- or County-defined acceptable LOS C conditions or better. During operation of this alternative, day to day operations and maintenance trips would be similar to those of those of the propose project. Similar to the proposed project, the total number of daily trips for maintenance of the solar panels are estimated to be less than the number of trips generated during construction. As construction impacts would be less than significant, operation of this alternative would also have a less-than-significant impact on area roadways.

With regard to consistency with CEQA *Guidelines* Section 15064.3, subdivision (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, subdivision (b) would be less than significant under the Reduced Acreage Alternative, as with the proposed project.

Based on the above, impacts would be less than significant. Given the similarity between this alternative's and the proposed project's construction and operational vehicle and truck trips, the Reduced Acreage Alternative would result in similar impacts related to transportation as the proposed project.

### *Tribal Cultural Resources*

Under the Reduced Acreage Alternative, the project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. However, no tribal cultural resources were identified within or immediately adjacent

to the project site. Therefore, impacts to tribal cultural resources would be less than significant with MM 4.5-1 and MM 4.5-2 (like for project).

### *Utilities and Service Systems*

Under the Reduced Acreage Alternative, the project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. Eliminating 4.4 acres from project development would not result in reduced demand for utilities and service systems, as the Reduced Acreage Alternative would still generate 44 MW of energy and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be the same as described under the proposed project.

As with the proposed 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 similar water demand as the proposed project. Wastewater and solid waste generation associated with this alternative would also be similar compared to the proposed project due to the similar number of employees required for maintenance of the solar panels. As the Reduced Acreage Alternative would not develop the project site, impervious surfaces would be minimized as much as possible, as with the proposed project. Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation MM 4.10-1, would include measures to offset increases in stormwater runoff caused by the project and would further reduce impacts.

This alternative is expected to result in less-than-significant impacts to utilities and service systems and impacts would be similar to those of the proposed project.

### *Wildfires*

Under the Reduced Acreage Alternative, the project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres.

Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-1, which would require the development and implementation of a Fire Safety Plan for use during construction, operation, and decommissioning of the project, which would further reduce the fire risks onsite. With regard to the installation or maintenance of associated infrastructure, solar panels would require installation of the electrical collector line, similar to the proposed project. The installation of the electrical collector line would not be placed within a high fire hazard zone and the vegetation would be cleared and thus would not result in increased fire risks that could result in temporary or ongoing impacts to the environment. Similar to the proposed project, the Reduced Acreage Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation proposed for the project, this alternative is expected to result in less-than-significant impacts to wildfires. The Reduced Acreage Alternative would likely result in slightly less impact than the proposed project due to the reduced footprint compared with the proposed project.

With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the Reduced Acreage Alternative and related projects have the potential to result in a cumulative impact related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

## Comparison of Impacts

The Reduced Acreage Alternative would be reduced in size compared to the proposed project, but would still generate 44 MW of energy and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be the same as described under the proposed project. Due to the reduced footprint, the Reduced Acreage Alternative would result in less or similar impacts for the majority of environmental issue areas. No impacts would be greater. However, this alternative would not eliminate significant and unavoidable impacts associated with aesthetics (cumulative only), air quality (project and cumulative), wildfire (cumulative only), and biological resources (cumulative only).

## Relationship to Project Objectives

The Reduced Acreage Alternative would achieve all of the project objectives listed above in Section 6.2. Under the Reduced Acreage Alternative, the project would avoid disturbing California Juniper Woodland located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres. Therefore, this alternative would create fewer environmental impacts and would be considered the preferred alternative.

# 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 situated throughout the Antelope Valley.

With regard to impacts related to scenic vistas, the quality of the existing scenic vista from both KOP 1 and KOP 6 is considered moderate to low given the existing visible solar facilities and wind turbines. The No Ground-Mounted Utility-Solar Development Alternative would not demolish any existing structures and any solar installation would occur on the roofs of the existing buildings. Thus, given the moderate to low visual quality and existing visual obstructions, the No Ground-Mounted Utility-Solar Development Alternative would not have a substantial adverse effect on a scenic vista. Impacts would be less than significant.

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.

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 proposed project.

### *Agriculture and Forest Resources*

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems 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 to non-agricultural use. As such, no impacts to agriculture or forestry resources would occur. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to agricultural resource compared to the proposed project.

### *Air Quality*

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems 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. The reduction in construction activities would also reduce the exposure of sensitive receptors to substantial pollutant concentrations, including valley fever. Implementation of Mitigation Measure MM 4.3-11 and MM 4.3-12 would not be required. During operation, this alternative would have similar impacts on air quality as the proposed project related to occasional vehicular visits for maintenance. As such, operational impacts would be less than significant. Overall, air quality impacts under this alternative would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to air quality compared to the proposed project.

### *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 4.4-10 and MM 4.4-14 through MM 4.4-16 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 4.4-13. Therefore, this alternative would not contribute to a cumulative loss of foraging and nesting habitat for burrowing owls, Swainson's hawk, other raptors, desert kit fox, and migratory bird species. As such, significant and unavoidable cumulative impacts would be eliminated as well. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to biological resources compared to the proposed project.

### *Cultural Resources*

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems 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.

### *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, this alternative would not require implementation of Mitigation Measure MM 4.3-5 as construction would be limited to trucks transporting the solar panels and installation of the solar panels on the rooftops of existing buildings. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would have a less-than-significant impact related to wasteful, inefficient, or unnecessary consumption of energy resources and this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As similar energy generation capabilities would be provided, impacts would be similar to those of the proposed project

### *Geology and Soils*

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems 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 this alternative to directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault or strong seismic ground shaking; result in substantial soil erosion or loss of topsoil; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. This alternative would not require implementation of Mitigation Measures MM 4.7-1 through MM 4.7-7. 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.

### *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, this alternative would have less-than-significant impacts related to generating GHG emissions that may have a significant impact on the environment or consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. However, impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology.

### *Hazards and Hazardous Materials*

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems 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 proposed project construction on the undeveloped project site. Similar to the proposed project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2 and MM 4.17-2 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Implementation of these mitigation measures would reduce impacts related to a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As it relates to wildland fires, as the small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout the 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 proposed 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 than the proposed project as this alternative would require usage of fewer hazardous materials.

### *Hydrology and Water Quality*

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems 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.

While completion of NPDES completion forms would not be required under the No Ground-Mounted Utility-Solar Development Alternative, similar to the proposed project, this alternative would require implementation of Mitigation Measure MM 4.9-1 in order to reduce potential impacts related to violating water quality standards or degradation of surface or groundwater quality during construction and operation of the No Ground-Mounted Utility-Solar Development Alternative.

As it relates to groundwater supplies, water requirements under the No Ground-Mounted Utility-Solar Development Alternative, similar to the proposed project, would be relatively small and would represent a small portion of the established safe yield of the basin, and would not substantially deplete groundwater levels in comparison to existing conditions. This alternative would also likely require minimal water as no dust suppression or concrete mixing would be required during construction and operational panel washing is expected to be less frequent given the location of panels on top of buildings throughout the Antelope Valley (rather than directly on sediment). As such, impacts would be less than significant.

With regard to existing drainage patterns, as small to medium solar PV systems would be developed on the rooftops of existing commercial and industrial facilities situated throughout the 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 be obtained from a nearby well or trucked to the solar panels from a local purveyor and would be subject to the requirements of the adjudicated basin management. Therefore, the 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 proposed project as this alternative would not require ground disturbance, which could potentially introduce more pollutants to stormwater, and water requirements during construction and operation of the this alternative would be reduced as no dust suppression or concrete mixing would be required during construction and operational panel washing is expected to be less frequent.

### *Land Use and Planning*

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems 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 CUP 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 similar impacts to mineral resource compared to the proposed project.

### *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 during construction, and noise impacts during construction would likely be significant and unavoidable. The operational noise generated from these solar PV systems would be similar to that of the proposed project and would result in less-than-significant impacts. With regard to vibration, construction of the No Ground-Mounted Utility-Solar Development Alternative would not require the use of vibratory rollers or other construction equipment with high groundborne vibration levels. Therefore, it is likely that construction vibration would have a less than significant construction vibration impact. Similar to the proposed project, operation of the No Ground-Mounted Utility-Solar Development Alternative would require regular maintenance trucks (0.076 in/sec PPV) and panel washing activities. Whether rooftop solar systems are proposed on historic buildings, which are more susceptible to vibration damage, or other types of newer buildings, this level of vibration would not exceed vibration thresholds and, as such, would result in less-than-significant impacts.

As discussed above, while construction and operational vibration impacts and operational noise impacts would be less than significant, impacts to noise would have the potential to be significant and unavoidable. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would result in greater 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 proposed 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. In addition, this alternative 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 proposed project, Mitigation Measure MM 4.14-1 would be implemented to reduce wildfire risks under this alternative. In addition, similar to the proposed project, in the event that a fire occurs during operation of the No Ground-Mounted Utility-Solar Development Alternative, this alternative would implement Mitigation Measure MM 4.14-2, which would require the project operator to pay Kern County development impact fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation of this alternative. Impacts related to fire protection would be less than significant with mitigation.

With regard to police protection, as the proposed small to medium solar PV systems would be installed in more urbanized areas on existing buildings, it is unlikely that construction and operation of the No Ground-Mounted Utility-Solar Development Alternative would attract attention. Similar to the proposed project, this alternative would increase traffic with truck trips during construction and routine maintenance during operation of this alternative. However, the additional volume of trips during construction and operation would be minimal and would not likely have a significant and adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

Based on the above, impacts are expected to be less than significant with mitigation. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to public services compared to the proposed project as the proposed small to medium solar PV systems would be developed in urbanized areas that already receive fire 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 proposed project, this alternative would require vehicular trips during construction to transport and install the solar panels. However, the trips would be more dispersed than the proposed project given the location of the existing facilities, thereby reducing impacts on the roadways surrounding the project site. As such, roadway segments within the 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 propose project. However, as with construction, these maintenance trips would be more dispersed than the proposed project given the location of the existing facilities. It is also estimated that the total number of daily trips for maintenance of the solar panels are less than the number of trips generated during

construction. As construction impacts would be less than significant, operation of this alternative would also have a less-than-significant impact on area roadways.

With regard to consistency with CEQA *Guidelines* Section 15064.3, subdivision (b), as regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a traffic impact. Therefore, impacts related to CEQA *Guidelines* Section 15064.3, subdivision (b) would be less than significant under the No Ground-Mounted Utility-Solar Development Alternative, as with the proposed project.

Based on the above, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to transportation compared to the proposed project.

### *Tribal Cultural Resources*

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems 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 less 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, t this 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, 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 proposed project, given the location of panels on top of buildings throughout the Antelope Valley (rather than directly on sediment). Wastewater and solid waste generation associated with this alternative would be similar to the proposed project due to the similar number of employees required for maintenance of the solar panels. As the No Ground-Mounted Utility-Solar Development Alternative would

not develop the project site, this alternative would not result in impervious surfaces and implementation of Mitigation Measures MM 4.10-1 would not be required.

Based on the above, impacts to utilities and service systems would be less than significant. This alternative would result in less overall impacts related to utilities and service systems than the proposed project.

### *Wildfires*

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems 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 proposed project. As such, similar to the proposed 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. Similar to the proposed project, the No Ground-Mounted Utility-Solar Development Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation, this alternative is expected to result in less-than-significant impacts to wildfires. The No Ground-Mounted Utility-Solar Development Alternative would likely result in slightly less impact than the proposed project as solar panels would be located in more urbanized areas.

With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the No Ground-Mounted Utility-Solar Development Alternative and related projects have the potential to result in a cumulative impact related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

## Comparison of Impacts

The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to aesthetics, agricultural and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, public services, transportation, tribal cultural resources, and utilities and service systems. Further, this alternative would avoid the significant and unavoidable impacts to aesthetics (cumulative only), air quality (project and cumulative), and biological resources (cumulative only) that would occur under the proposed project. However, this alternative would result in greater impacts to land use as it would require extensive discretionary actions, such as design review, CUPs, or zone variances, depending on local jurisdictional requirements. This alternative would also result in greater impacts to GHG emissions given is reduced solar energy production efficiency. This alternative would not eliminate significant and unavoidable impacts associated with

wildfires (cumulative only). In addition, the No Ground-Mounted Utility-Solar Development Alternative would result in a significant and unavoidable impact as it relates to noise.

## Relationship to Project Objectives

This alternative would satisfy the project objective of assisting California in reducing GHG emissions. However, the battery storage component of the project would not be constructed under this alternative. The alternative would not achieve other project objectives including utilizing existing transmission infrastructure to minimize costs. It is also unlikely the project would have an average insolation value of 6 kWh/m2/day or greater given the lack of efficiency of rooftop solar compared to solar tracking technology. Additionally, there are some drawbacks to this alternative that include, but not limited to those listed below.

- The system would not likely be built out within a timeframe that would be similar to that of the proposed project.
- Given the distributed nature of such a network of facilities, construction, management, and maintenance would not be as efficient, and total capital costs would likely be higher.
- The project proponent does not have immediate control or access to potential urban sites that could accommodate facilities to generate 44 MW of solar power.
- A distributed system of the scale of the project would be cost-prohibitive.
- Battery storage is not included.

This alternative would enable the generation of up to 44 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. Given the size of the proposed project, the project objectives, and the need to arrange a suitable assemblage of participating commercial and industrial properties, it is impractical and infeasible to propose a distributed generation project of this type and still proceed within a reasonably similar timeframe.

# 6.8 Environmentally Superior Alternative

As presented in the comparative analysis above, and as shown in Table 6-2, 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 and biological resources. Impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology. This alternative would also result in greater impacts to land use as it would require extensive discretionary actions, such as design review, CUPs, or zone variances, depending on local jurisdictional requirements and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. In addition, the No Ground-Mounted Utility-Solar Development Alternative would increase result in a significant and unavoidable impact as it relates to construction noise. However, this alternative would result in less impact to aesthetics, agricultural and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, public services, transportation, tribal cultural resources, and utilities and service systems. Thus, for most environmental issue areas, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the proposed project.

It is important to note that it is considered to be impracticable and infeasible to construct the No Ground-Mounted Utility-Solar Development Alternative within the same timeframe and/or with the same efficiency as the proposed project because the project proponent lacks control and access to the sites required to develop 44 MW of distributed solar generated electricity. In addition, this alternative would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Nonetheless, because this alternative reduces impacts to a greater degree than the General Plan and Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

# Chapter 7
# Response to Comments

This chapter is being reserved for, and will be included with, the Final EIR.

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Chapter 8
# Organizations and Persons Consulted

## 8.1 Federal

Edwards Air Force Base, Sustainability Office

Naval Air Weapons Station China Lake

U.S. Air Force – Travis

U.S. Air Force – Fort Irwin

U.S. Army

U.S. Army Corps of Engineers

U.S. Bureau of Land Management, California State Office

U.S. Bureau of Land Management, Ridgecrest Field Office

U.S. Bureau of Land Management, California Desert District

U.S. Department of Agriculture, Natural Resource Conservation Service

U.S. Environmental Protection Agency Region IX

U.S. Fish and Wildlife Service

U.S. Marine Corps

U.S. Navy

U.S. Postal Service

## 8.2 State of California

California Air Resources Board

California Department of Conservation, Director's Office

California Department of Conservation, Division of Oil & Gas

California Department of Conservation, Office of the State Geologist

California Department of Conservation, Office of Land Conservation

California Department of Fish & Wildlife

California Department of Food and Agriculture

California Energy Commission

California Farm Bureau

California Public Utilities Commission

California Regional Water Quality Control Board, Lahontan Region

California State Clearinghouse

California State Lands Commission

California State University, Bakersfield

Caltrans District 6

Caltrans District 9

Integrated Waste Management

State Water Resources Control Board, Division of Drinking Water

# 8.3 Regional and Local

AES Midwest Wind Gen

Antelope Valley-East Kern Water Agency

Antelope Valley Resource Conservation District

Beyond Coal Campaign, Sierra Club

Center on Race, Poverty & the Environment

Center on Race, Poverty & the Environmental, CA Rural Legal Assistance Foundation

Chumash Council of Bakersfield

Congentrix Sunshine, LLC

David Laughing Horse Robinson

David Walsh

Defenders of Wildlife

Eastern Kern Air Pollution Control District

EDP Renewables Company

Eight Bar Ranch

Fotowatio Renewable Ventures

Avangrid Renewables

Inyo County Planning Department

Joyce LoBasso

Kelly Group

Kern Audubon Society

Kern Council of Governments

Kern County Administrative Office

Kern County Agriculture Department

Kern County Board of Supervisors, 2nd District

Kern County Environmental Health Services Department

Kern County Fire Department

Kern County Library, Beale Branch

Kern County Library, Beale Branch, Local History Room

Kern County Library, Mojave Branch

Kern County Museum

Kern County Parks and Recreation

Kern County Public Works Department, Building and Development, Floodplain

Kern County Public Works Department, Building and Development, Survey

Kern County Public Works Department, Building and Development, Development Review

Kern County Public Works Department, Building and Development, Code Compliance

Kern County Public Works Department, Operations and Maintenance, Regulatory Monitoring and Reporting

Kern County Sheriff's Department

Kern County Superintendent of Schools

Kern County Water Agency

Kern High School District

Kern Valley Indian Council

Kern Valley Indian Council, Historic Preservation Office

Kings County Planning Agency

Kitanemuk & Yowlumne Tejon Indians, Chairperson

LIUNA, Danny Zaragoza

Local Agency Formation Commission (LAFCO)

Los Angeles Audubon

Los Angeles County Regional Planning Department

The Gorman Law Firm

Mojave Chamber of Commerce

Mojave Foundation

Mojave Town Council, President

Native American Heritage Council of Kern County

Pacific Crest Trail Program Manager

Pacific Crest Trail Association

Pacific Gas and Electric

Recurrent Energy

Renewal Resources Group Holding Company

Robert Burgett

San Bernardino County Planning Department

San Luis Obispo County Planning Department

Santa Barbara County Resource Management Department

Santa Rosa Rancheria

Structure Cast

Southern California Edison Planning Department

Sierra Club/Kern Kaweah Chapter

Southern San Joaquin Valley Information Center, CSU - Bakersfield

Tehachapi Area Association of Realtors,

Tejon Indian Tribe

Terra-Gen Power, LLC

T.T. Case

Tubatulabals of Kern County

Tule River Indian Tribe

Tulare County Planning Development Department

Ventura County Resource Management Agency Planning Division

Wind Stream, LLC

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Chapter 9
# List of Preparers

## 9.1 Lead Agency

### Kern County Planning and Community Development Department

Lorelei H. Oviatt, AICP – Planning Director

Craig M. Murphy – Advance Planning Division Chief

Terrance Smalls – Supervising Planner

Janice Mayes - Planner

## 9.2 Technical Assistance

### Environmental Science Associates (ESA)

Kimberly Comacho – Project Director

Cristina Gispert – Project Manager

Aaron Wiener – Deputy Project Manager, Technical Analyst

Eric Schniewind – Senior Geologist, Hydrologist, and Hazardous Materials Analyst

Jeff Goodson – Senior Air Quality and Noise Analyst

Jaclyn Catino-Davenport – Senior Biological Resource Analyst

Michael Bever – Senior Archaeologist

Shadde Rosenblum – Senior Traffic Analyst

Arabesque Abdelwahed – Senior Technical Analyst

Jaqueline De La Rocha – Senior Technical Analyst

Michael Stewart – Air Quality and Noise Analyst

Paige Anderson – Aesthetics Analyst

Lisa Maier - Technical Analyst

Tim Witwer - Technical Analyst

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Chapter 11
# Environmental Assessment

## 11.1 Introduction

The Bureau of Land Management (BLM) has prepared this Environmental Assessment (EA) pursuant to the National Environmental Policy Act of 1969 (NEPA, 42 U.S.C. Section 4321 et seq.), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500–1508), and BLM NEPA Handbook H-1790-1. This EA evaluates the environmental effects of the Camino Solar Project in Kern County, California (the Proposed Action or project).

### Purpose and Need

The BLM's purpose and need for the Proposed Action is to respond to Aurora Solar, LLC's application under Title V of the Federal Land Policy and Management Act of 1976 (FLPMA, 43 U.S.C. Section 1761(a)(4)) to grant a right-of-way (ROW) for the construction, operation, maintenance, decommissioning and restoration of a solar photovoltaic (PV) facility.

### Decision to Be Made

The BLM will decide whether to grant, grant with conditions, or deny the requested ROW.

## 11.2 Issues

The issues analyzed in this EA have been identified based on the potential for the project to cause an impact on the human and physical environment at the site of the project. **Table 11-1,** *Issues*, identifies the issues raised by the project and presents a rationale for which resource/environmental factors warrant further analysis in this EA. An evaluation of these issues is presented in Section 11.5, *Environmental Consequences of the Proposed Action*. Appendix M-1 contains the full text of all mitigation measures discussed throughout this EA.

**TABLE 11-1: ISSUES**

| Resource/ Environmental Factor | Further EA Analysis Warranted? | Issues |
|---|---|---|
| Air Quality | **Yes** | The Eastern Kern Air Pollution Control District (EKAPCD) is designated as non-attainment with respect to the California Ambient Air Quality Standards for criteria pollutants related to ozone and $PM_{10}$ and National Ambient Air Quality Standards for criteria pollutants related to ozone. Construction of the project could generate emissions that exceed state and federal thresholds for ozone and $PM_{10}$. This resource is further analyzed in Section 1.5, *Environmental Consequences of the Proposed Action*. |

**TABLE 11-1: ISSUES**

| Resource/ Environmental Factor | Further EA Analysis Warranted? | Issues |
|---|---|---|
| Biological Resources | **Yes** | No threatened, endangered, or proposed for listing animal or plant species have been identified within or near the project area. Impacts to these species are unlikely. The project may impact vegetation, sensitive plant species, woodlands and habitat. This resource is further analyzed in Section 11.5, *Environmental Consequences of the Proposed Action*. |
| Cultural Resources | **Yes** | Proposed grading activities may impact archaeological and historic resources or sites with Native American religious concerns. This is further analyzed in Section 11.5, *Environmental Consequences of the Proposed Action*. |
| Development Focus Areas | No | The project will comply with all Desert Renewable Energy Conservation Plan (DRECP) Conservation Management Actions (CMAs) that are applicable to Development Focus Areas (DFA). See Section 11.4, *Land Use Plan Conformance and Relationship to Statutes, Regulations and Other Plans*, and Appendix M-2. No further analysis is warranted in this EA. |
| Environmental Justice | No | There are no identified minority income populations in the project area. No further analysis is warranted in this EA. |
| Floodplains | No | The project is not located within any 100-year flood zones or other identified floodplain. No further analysis is warranted in this EA. |
| Farmland (Prime or Unique) | No | The project is not located within any Prime or Unique Farmlands as designated by the U.S. Department of Agriculture. No further analysis is warranted in this EA. |
| Fuels and Fire Management | No | With implementation of Mitigation Measure MM 4.14-1, the project operator would implement a Fire Safety Plan to minimize potential for ignition and spread of wildland fire during construction, operation, decommissioning and restoration of the project. In addition to associated vegetation clearance standards, adherence to building codes relevant to fire safety and other applicable laws and regulations would reduce wildfire ignition potential and project-related wildfire risk. Further details are provided in Section 4.14, *Public Services*, of the Draft EIR/EA. No further analysis is warranted in this EA. |
| Greenhouse Gas Emissions | **Yes** | The project would generate greenhouse gas (GHG) emissions during construction, operation, decommissioning and restoration activities, but is expected to have a beneficial impact overall by displacing significant amounts of GHGs over the course of the project's lifespan. This environmental factor is further analyzed in Section 11.5, *Environmental Consequences of the Proposed Action*. |
| Geology / Mineral Resources/ Energy Production | No | The project has the potential to be subjected to strong seismic ground shaking. No other geologic impacts are anticipated (see Section 4.7, *Geology and Soils*, of this EIR/EA, for details). Mitigation Measures MM 4.7-1 through MM 4.7-4 would fully mitigate impacts for geologic, seismic hazards and/or related events. There are no known mineral resources at the project site and the project would not interfere with nearby mineral extraction operations (see Section 4.12, *Mineral Resources*, of this EIR/EA, for details). There are also no known petroleum or natural gas resources at the project site (see Section 4.12, *Mineral Resources*, of this EIR/EA, for details). The project would utilize solar energy resources to generate electricity. Solar energy is a renewable resource. Therefore, no impacts to finite energy resources are anticipated. No further analysis is warranted in this EA. |

**TABLE 11-1: ISSUES**

| Resource/ Environmental Factor | Further EA Analysis Warranted? | Issues |
|---|---|---|
| Invasive Plants / Noxious Weeds | No | The project will fully comply with DRECP CMA LUPA-BIO-10, which establishes standard practices for weed management; therefore, there will be no substantial impacts or extraordinary circumstances with respect to the management of invasive species/noxious weeds. No further analysis is warranted in this EA. |
| Lands/Access | No | No encumbrances exist at the project site. An existing dirt road identified as 135208 in the Wester Mojave Plan currently bisects the project site in a north/south direction. The project would relocate the dirt road to eastern perimeter of the project site boundary such that access from the south of the project site to the north would be maintained. No other impacts to lands or access is anticipated. No further analysis is warranted in this EA. |
| Livestock Grazing | No | The entire project site is located within the 7,871-acre Antelope Valley grazing allotment under the management of the BLM Ridgecrest Field Office. The BLM-administered portion of the project site was subject to an existing grazing permit. However, that permit expired in February 2019. No further analysis is warranted in this EA. |
| Noise | No | There are no occupied residential dwellings or other noise-sensitive receptors within 1,000 feet of the project site, nor are there any sensitive wildlife species located at the project site that could be affected by noise. The closest noise sensitive receptors to the project site are residences located approximately 1.2 miles to the west of the site. See Section 4.13, *Noise*, of this EIR/EA, for further details. No further analysis is warranted in this EA. |
| Paleontological Resources | **Yes** | Proposed grading activities may impact paleontological resources. This resource is further analyzed in Section 11.5, *Environmental Consequences of the Proposed Action*. |
| Wastes (Hazardous or Solid) | No | No potentially harmful materials would be left on, or in the vicinity of the project area. No chemicals subject to Superfund Amendments and Reauthorization Act (SARA) Title III in amounts greater than 10,000 pounds would be used. No extremely hazardous substances as defined in 40 CFR Section 355 in threshold planning quantities would be used. Solid waste generated from the project area would be properly disposed at an approved landfill. In addition, the project will implement Mitigation Measures MM 4.9-1, which requires the preparation and implementation of a Hazardous Materials Business Plan, MM 4.9-2, which includes requirements for herbicide application, and MM 4.17-1, which includes requirements for solid waste disposal. No further analysis is warranted in this EA. |
| Rangeland Health Standards and Guidelines | No | Rangeland Health Assessments have not been completed within the project's land status area. No further analysis is warranted in this EA. |
| Recreation | No | The project site does not contain any recreational resources and would not impact any Special Recreation Management Areas (SRMA) or Extensive Recreation Management Area (ERMAs). No further analysis is warranted in this EA. |
| Socioeconomics | No | There are no identified minority or low-income populations in the study area for the project. No further analysis is warranted in this EA. |

**TABLE 11-1: ISSUES**

| Resource/ Environmental Factor | Further EA Analysis Warranted? | Issues |
|---|---|---|
| Soils | **Yes** | The project may result in soil erosion. This resource is further analyzed in Section 11.5, *Environmental Consequences of the Proposed Action*. |
| Special Designations | No | The project site does not occur within any Areas of Critical Environmental Concern (ACEC), National Conservation Lands (NCL), Wilderness Areas or areas managed for wilderness character. The nearest ACEC, NCL, National Monument, and Wilderness Areas include the following:<br>• West Desert and Eastern Slopes NCL located 14.5 miles to the northeast of the project site;<br>• Horse Canyon ACEC located 15 miles to the northeast of the project site;<br>• Cesar E Chavez National Monument is located 20 miles to the north of the project site; and<br>• Bright Star Wilderness located 37 miles to the northeast of the project site.<br>Due to the project's distance from the nearest special land designations, no direct or indirect, or short-term or long-term effects are anticipated for special designations. Thus, no further analysis is warranted in this EA. |
| Unallocated Lands | No | Unallocated lands are not present at or near the project site. No further analysis is warranted in this EA. |
| Variance Lands | No | Variance lands are not present at or near the project site. No further analysis is warranted in this EA. |
| Visual Resources | **Yes** | The project could affect scenic vistas or other public views from the Pacific Crest Trail. This resource is further analyzed in Section 11.5, *Environmental Consequences of the Proposed Action*. |
| Wetlands / Riparian Zones | No | No wetlands or riparian zones are at or near the project site. No further analysis is warranted in this EA. |
| Wild and Scenic Rivers | No | No wild and scenic rivers are identified in or adjacent to the project area. No further analysis is warranted in this EA. |
| Water Resources | **Yes** | The project may result in erosion, sedimentation, and may also affect water quality if an accidental release of hazardous materials occurred. The project also has the potential to decrease groundwater supplies. These environmental factors are further analyzed in Section 11.5, *Environmental Consequences of the Proposed Action*. |
| Wild Horses and Burros | No | The project is not proposed, nor would be located, within any Herd Areas or Herd Management Areas for wild horses and burros. No further analysis is warranted in this EA. |

# 11.3 Proposed Action and Alternatives

## Alternative A – Proposed Action

The project would include the development of a solar facility and associated infrastructure with the capacity to generate a maximum of 44 megawatts (MW) of Solar Photovoltaic energy and energy storage capacity on a total of 383 acres. Lands within the project site include 233 acres of public lands administered by the BLM Ridgecrest Field Office and 150 acres of private land. The project would operate year-round. Project facilities would include solar PV generating facilities and solar modules, an energy storage facility, on-site substation or switchyard, electrical collector system and inverters, and site access and security components. Each is summarized below; further details are provided in Chapter 3.0, *Project Description*, of this EIR/EA.

- **Solar PV Generating Facilities and Solar Modules:** Installation of PV modules with the capacity to generate up to 44 MW of solar-generated electricity. Solar panels would be made of thin film or polycrystalline silicon material covered by glass, mounted on a galvanized metal fixed tilt or single axis racking system, and connected to inverters and to an energy storage facility.
- **Energy Storage Facility:** Installation of an energy storage system and appurtenances that would provide energy storage capacity for the electric grid.
- **On-site Substation or Switchyard:** No on-site substations would be constructed as part of the project. Rather, the project would connect the existing Manzana Project and Whirlwind substations with minor on-site modifications to add circuit breakers, disconnect switches, metering and protection equipment, main step-up transformers, and other electrical equipment.
- **Electrical Collector System and Inverters:** Underground medium voltage (34.5 kilovolt [kV]) collection systems throughout the solar facility and overhead medium voltage collection systems. The collection systems would be aggregated at multiple circuit breakers or medium voltage switchgear positions within the project facilities, leading to the Manzana Project Substation. A new, approximately 0.75-mile-long, underground 34.5 kV collector line would be constructed on private land between the Camino Solar site and the existing Manzana Project substation. A single riser pole would connect the line to the existing aboveground Manzana Project transmission line at the interconnection with the substation. At the Manzana Project substation, transformers would increase the project-generated energy from 34.5 kV to 230 kV. The energy then would be transferred to the existing Whirlwind Substation using the Manzana Project's 230 kV generation tie (gen-tie) line.
- **Site Access and Security:** On-site access roads and perimeter security fencing and nighttime directional lighting.

Typical Operations and Maintenance (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 existing O&M facility and staff for the Manzana Wind facility would be utilized for the project by the project proponent. Up to three additional staff may be required to operate and maintain the project. The existing O&M facility is located at the southern edge of the project (see Figure 3-2, *Project Site*, of this EIR/EA).

The project has an anticipated operational life of up to 35 years, after which the project proponent may choose to update site technology and re-commission, or decommission and remove the systems and their components and restore the site.

## Alternative B – Reduced Acreage Alternative

Alternative B, the Reduced Acreage Alternative, would reduce the project acreage by avoiding an area of the project site that contains California Juniper Woodland. This area is located within the northwest portion of the project site and would reduce the project's footprint from 383 acres to 378.6 acres (see Figure 6-1, *Reduced Acreage Alternative*, in Chapter 6, *Alternatives*, of this EIR/EA). All project facilities would remain in the same locations as proposed under the project, including the 34.5 kV collector line, which would still be constructed on private land between the Camino Solar site and the Manzana Project substation. The energy would be transferred to the Whirlwind Substation using the existing Manzana Project 230 kV gen-tie line. The acreage of this alternative is expected to retain enough land to construct a solar array field capable of generating 44 MW, which is the same generation output estimated for the project.

## Alternative C – No Action Alternative

Under the No Action Alternative, none of the proposed infrastructure would be constructed, none of the proposed operation and maintenance activities would take place, decommissioning-related disturbance and other activities would not occur, and existing site conditions would remain unchanged by project development or operation.

## Alternatives Considered but Eliminated from Further Analysis

Alternatives considered but eliminated from further analysis are discussed in Section 6.5. In addition, no further analysis is provided for the following alternatives, which were selected for further consideration by Kern County for purposes of CEQA.

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

BLM decided not to further analyze Alternative 2: General Plan/Specific Plan and Zoning Build-Out Alternative because this alternative would solely apply to private lands under the jurisdiction of Kern County. The BLM-administered portion of the project site would remain a renewable energy development project. This is because the project site is located in a DFA as designated by the Desert Renewable Energy Conservation Area Plan (DRECP). Further details about the DRECP are provided in Section 11.4, *Land Use Plan Conformance and Relationships to Statutes, Regulations and Other Plans*. According to the DRECP, DFAs are available for solar, wind, and/or geothermal development.

Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only was not carried forward for further analysis in this EA analysis because BLM has no authority over the installation of distributed generation systems, other than on its own facilities.

Therefore, BLM would have no action to approve or evaluate under this alternative scenario as described in Chapter 6, *Alternatives*, of this EIR/EA.

# 11.4 Land Use Plan Conformance and Relationships to Statutes, Regulations and Other Plans

Applicable BLM land use plans for the project include the California Desert Conservation Area (CDCA) Plan of 1980, as amended. The latest amendment to the CDCA Plan (DRECP) was approved in September 2016. The plan amendment balances land conservation and outdoor recreation with the growing demand for renewable energy, including identifying requisite Conservation and Management Actions (CMAs). The project site is located within a DFA. The project would comply with all applicable statutes and regulations and all applicable DRECP CMAs. For a consistency analysis of the project relative to the DRECP's CMAs, see Appendix M-2.

# 11.5 Environmental Consequences of the Proposed Action

This section presents a concise assessment of the potential direct, indirect, and cumulative impacts of the project relative to the issues warranting further analysis identified in Section 11.2, *Issues*. For a detailed analysis of potential direct, indirect, and cumulative impacts of the project to all applicable issues identified in Table 11-1, *Issues*, see Chapter 4 of this EIR/EA. Cumulative projects considered as part of the provided analysis are listed in Chapter 3, *Project Description*, Table 3-5, *Cumulative Projects List*, of this EIR/EA, and include nine solar projects and eight non-solar project. The impact analysis for these issues considers the full implementation of all applicable CMAs in conformance with the DRECP described above. Appendix M-1 contains the full text of all required mitigation measures discussed in this EA.

## Air Resources

Information in this section is based, in part, on the project's air quality technical report, Air Quality and Greenhouse Gas Impact Analysis for the Proposed Camino Solar Project (Ambient 2017) located in Appendix C of this EIR/EA.

### Applicable Laws, Regulations, Plans, and Standards

All laws, regulations, plans and standards that govern air resources are identified in Section 4.3, *Air Quality*, Subsection 4.3.3, *General Conformity*, of this EIR/EA, and are summarized here. The federal Clean Air Act, Section 176 requires federal agencies that are funding, permitting, or approving an activity to ensure the activity conforms to the applicable State Implementation Plan (SIP) adopted to eliminate or reduce air quality violations (42 U.S.C. § 7506). Pursuant to the 1990 Federal Clean Air Act Amendments, the United States Environmental Protection Agency (EPA) passed federal conformity rules to ensure that air pollutant emissions associated with federally-approved or funded activities do not exceed emission budgets established in the applicable SIP and do not otherwise interfere with the state's ability to attain and maintain the federal Ambient Air Quality Standards in areas working to attain or maintain the standards. The General

Conformity rule applies to all non-transportation related projects. A detailed determination of the applicability of the General Conformity rule is required pursuant to 40 CFR Part 51, Subpart W, when federal actions or funding of non-transportation related activities in non-attainment areas result in emissions that exceed *de minimis* threshold levels applicable to the specific non-attainment class (EPA, 2010).

The project is located in a serious federal non-attainment area for ozone (EKAPCD 2018), and therefore the project and alternatives would be subject to the general conformity regulations if their emissions of ozone precursors (reactive organic gases [ROG] and nitrogen oxide [$NO_x$]) exceed *de minimis* levels of 50 tons per year for ROG and 50 tons per year for $NO_x$. Implementation of the project would have a direct adverse effect on air quality if proposed activities would result in emissions equal to or in excess of the General Conformity *de minimis* levels for non-attainment pollutants.

In addition, General Conformity *de minimis* levels can also be used as conservative NEPA thresholds for determining if project-related attainment pollutants would have an adverse effect on air quality. The total annual emissions of attainment pollutants from construction activities would be compared against the minimum *de minimis* levels of these pollutants, i.e., 100 tons/year for moderate non-attainment (USEPA 2018). Actions with the potential to generate emissions exceeding these thresholds would have an adverse effect on air quality.

## Affected Environment

The project site is located in the northwestern portion of the Mojave Desert Air Basin (MDAB), under the jurisdiction of Eastern Kern Air Pollution Control District (EKAPCD). The MDAB is classified as nonattainment for the federal 8-hour $O_3$ standard.

## Environmental Consequences

**Alternative A – Proposed Action:** The project is located in a serious non-attainment area for ozone (EKAPCD 2018); therefore, the project and alternatives would be subject to the general conformity regulations if emissions of ozone precursors exceed *de minimis* levels of 50 tons per year for ROG and 50 tons per year for $NO_x$. **Table 11-2,** *Estimated Annual Project Emissions*, shows the estimated annual project emissions of ozone precursors (ROG and $NO_x$) that are projected to be generated by the project.

**TABLE 11-2: ESTIMATED ANNUAL PROJECT EMISSIONS**

| | Estimated Annual Emissions (tons/year) | | | | | |
|---|---|---|---|---|---|---|
| **Source** | **ROG** | **$NO_x$** | **CO** | **$SO_X$** | **$PM_{10}$** | **$PM_{2.5}$** |
| Annual Construction Emissions | 1.3 | 10.9 | 8.2 | 0.0 | 23.2 | 2.8 |
| Annual Operation Emissions | 0.1 | 0.6 | 0.5 | 0.0 | 0.8 | 0.1 |
| General Conformity *de minimis* Levels | 50 | 50 | 100 | 100 | 100 | 100 |
| Exceed *de minimis* Levels? | No | No | No | No | No | No |

SOURCE: AMBIENT 2017; USEPA 2018

As shown in Table 11-2, *Estimated Annual Project Emissions*, ROG and $NO_x$ emissions generated by project-related construction and operation activities would not exceed the applicable General Conformity

*de minimis* levels of these non-attainment pollutants. Therefore, the project would conform to the SIP and would not have a substantial adverse effect on air quality under NEPA, and the BLM is exempt from performing a conformity determination. In addition, project emissions of attainment or maintenance area pollutants, shown in Table 4.3-4, *Cumulative Construction Emissions Near Project*, in Section 4.3, *Air Quality*, of this EIR/EA, would not exceed *de minimis* levels of 100 tons/year for these attainment or maintenance area pollutants. Therefore, project emissions are not expected to significantly affect air quality. Mitigation Measures MM 4.3-1 and MM 4.3-2 would further reduce project emissions.

During project construction, decommissioning and restoration, it is possible that on-site workers could be exposed to Valley Fever as fugitive dust (i.e., particulate matter [$PM_{10}$ and $PM_{2.5}$]) is generated during construction. The initial, or acute, form of Valley Fever often is mild, with few, if any, symptoms. The initial infection (if it does not completely resolve) may progress to a chronic form of pneumonia. Valley Fever is rarely fatal. The risk of contracting Valley Fever can effectively be managed by dust control. Dust minimizing mitigation such as diesel construction equipment maintenance and standards, maintaining natural vegetation where possible, application of water, application of dust suppressants and requiring financial contribution to Valley Fever public awareness programs would be implemented pursuant to Mitigation Measures MM 4.3-1 through MM 4.3-4 and would substantially reduce potential exposure to the fungus within the soil as compared to full grading/blading of the site. Additionally, implementation of dust control measures throughout the construction period compliant to EKAPCD rules and regulations to reduce fugitive dust emissions would also limit the exposure of both on-site workers and members of the public. In addition, when exposure to dust is unavoidable, employers must provide National Institute of Occupational Safety and Health (NIOSH)-approved respiratory protection with particulate filters rated as N95, N99, N100, P100, or high-efficiency particulate arrestance (HEPA), and employers must develop and implement a respiratory protection program in accordance with California's Occupational Safety & Health Administration (Cal/OSHA)'s Respiratory Protection standard (8 CCR 5144). Also, implementation of Mitigation Measure MM 4.3-3 would further reduce the potential for worker exposure by requiring respiratory protection and other work safety protocols to reduce exposure to Valley Fever.

**Alternative B – Reduced Acreage Alternative:** Alternative B would avoid disturbance within 4.4 acres of California Juniper Woodland located on-site. Avoidance of this area would reduce the project footprint by approximately 1 percent. Since Alternative B would construct approximately the same sized solar array field as the project, it is expected that Alternative B would generate approximately the same quantities pollutant emissions as Alternative A, and air quality impacts would therefore be substantially the same.

Alternative B would generate approximately the same quantities of annual pollutant emissions as Alternative A, as shown in Table 11-2, *Estimated Annual Project Emissions*. Therefore, nonattainment emissions of ROG and $NO_x$, generated by Alternative B-related construction and operation activities would not exceed the General Conformity *de minimis* levels. Therefore, Alternative B would conform to the SIP and the BLM would be exempt from the requirement to perform a conformity determination. In addition, Alternative B-related construction and operation activities, would not exceed *de minimis* levels of 100 tons/year for these attainment pollutants. Therefore, project emissions under Alternative B would not be expected to result, either directly or indirectly, in a substantial adverse effect on air quality. Mitigation Measures MM 4.3-1 and MM 4.3-2 would further reduce Alternative B emissions.

Alternative B would also have substantially the same potential for Valley Fever impacts as the project. Implementation of Mitigation Measures MM 4.3-3 and MM 4.3-4 would further reduce the potential for worker exposure to Valley Fever.

**Alternative C – No Action Alternative:** Under the No Action Alternative, the project site would remain undeveloped and there would be no construction, operation and maintenance, decommissioning or restoration activities that would generate air emissions or expose individuals to Valley Fever spores. Therefore, there would be no impacts to air resources.

## Cumulative Impacts

**Alternative A – Proposed Action:** The geographic scope for potential cumulative air quality impacts consists of the air basin for the project: the MDAB. The temporal scope includes the approximately 35-year period including the construction, operation, maintenance, decommissioning or restoration phases of the project. Regionally, as indicated in Table 11-2, *Estimated Annual Project Emissions*, the non-attainment pollutant emissions of ROG and $NO_x$ that would be generated by project-related activities would not exceed *de minimis* thresholds for the MDAB. Therefore, the project would conform to the SIP for nonattainment pollutants and would not require a formal conformity determination in compliance with Section 176(c) of the Clean Air Act.

Cumulative impacts resulting from the project, in conjunction with the ongoing impacts of past projects (as reflected in the description of the affected environment in Chapter 3, *Project Description*, Section 3.9, *Cumulative Projects*, of this EIR/EA) and the impacts from other present and reasonably foreseeable future projects (see Table 3-5, *Cumulative Projects List*, of this EIR/EA) would occur. However, due to the temporary nature of construction and decommissioning/restoration emissions and relatively minor amount of overall project emissions, the incremental impacts of the project in conjunction with other projects in the cumulative scenario would not result in a substantial short- or long-term adverse impact on air quality conditions in the MDAB. Locally, the implementation of fugitive dust control measures on the project site would ensure that $PM_{10}$ and $PM_{2.5}$ emissions from on-site activities would not meaningfully contribute to the generation of emissions in the MDAB. With these measures, dust caused by project activities would be confined to the project site areas and would not cumulatively interact with dust generated from other projects farther away.

**Alternative B – Reduced Acreage Alternative:** Cumulative air resources impacts for Alternative B would be substantially the same as described for Alternative A, since Alternative B would construct approximately the same sized solar array field (approximately 4.4 acres smaller than Alternative A). Therefore, Alternative B would not cause or contribute to a substantial cumulative short- or long-term adverse impact on air quality conditions in the MDAB.

**Alternative C – No Action Alternative:** The No Action Alternative would not generate emissions, and so would not cause or contribute to any cumulative impact to air resources.

## Residual Effects

No anticipated residual impacts would remain after the implementation of mitigation measures recommended to address Alternative A or Alternative B-specific impacts. No additional mitigation measures are recommended.

# Biological Resources

The analysis presented in this section is based on a review of relevant literature (see Section 4.4, *Biological Resources*, Subsection 4.4.1, *Introduction*, of this EIR/EA), and the field reconnaissance surveys and focused biological surveys presented in the 2018 Biological Resources Technical Report (BRTR) prepared for this project. A full copy of the BRTR is provided in Appendix D of this EIR/EA.

## Applicable Laws, Regulations, Plans, and Standards

The laws, regulations, plans and standards that are applicable to this analysis of impacts to biological resources are identified in Section 4.4, *Biological Resources*, Subsection 4.4.3, *Regulatory Setting*, of this EIR/EA.

## Affected Environment

### *Special-Status Plant Species*

Special-status[1] plant species that are present or have a moderate or high potential to occur in the project site include the following: short-bracted bird's-beak (*Cordylanthus rigidus* ssp. *brevibracteatus*) (CRPR 4.2), Mt. Pinos larkspur (*Delphinium parryi* ssp. *purpureum*) (CRPR 4.3), Robbins' nemacladus (*Nemacladus secundiflorus* var. *robbinsii*) (CRPR 1B.2), Latimer's woodland-gilia (*Saltugilia latimeri*) (CRPR 1B.2, BLMS), Lemmon's syntrichopappus (*Syntrichopappus lemmonii*) (CRPR 4.3), Joshua tree (*Yucca brevifolia*) (proposed for listing as "threatened" pursuant to the Federal Endangered Species Act [FESA] [FT]), silver cholla (*Cylindropuntia echinocarpa*) (CDNPA), and beavertail cactus (*Opuntia basilaris* var. *basilaris*) (CDNPA), based on the vegetation and habitats that were characterized during field surveys.

### *Special-Status Wildlife Species*

The federally and state threatened desert tortoise (*Gopherus agassizii*) has not been recorded at the project site after multiple years of protocol-level surveys, or during protocol surveys at adjacent sites making it Not Likely to Occur on the project site. This is further supported by email correspondence from BLM and the USFWS stating that desert tortoise is considered absent from the project site.

The federally-protected, BLM Sensitive, and CDFW fully-protected golden eagle has been observed flying over the project site. The project site provides suitable foraging habitat but there is no suitable habitat for nesting.

[1] Special-status, for purposes of this EA, includes: Species listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the California Endangered Species Act (Fish and Game Code §§ 2050-2116, CESA) or federal Endangered Species Act (16 U.S. Code Ch. 35, FESA); species protected under the federal Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668c); species that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA *Guidelines* § 15380); plants listed as rare under the California Native Plant Protection Act (Fish and Game Code § 1900 et seq.); plants considered by the California Native Plant Society to be rare, threatened, or endangered in California (California Rare Plant Rank [CRPR]); BLM Sensitive Species (All plant species that are CRPR 1B are considered BLM sensitive species, along with others that have been designated by the California State Director); species covered under an adopted Natural Community Conservation Plan/Habitat Conservation Plan; CDFW wildlife species of special concern; wildlife fully protected in California (Fish and Game Code § 3511, 4700, 5050); and plants covered under the California Desert Native Plants Act (CDNPA).

Other BLM Sensitive species that are present or have a moderate or high potential to occur on the project site include the coast horned lizard (*Phrynosoma blainvillii*), Swainson's hawk (*Buteo swainsoni*) burrowing owl (*Athene cunicularia*), Tulare grasshopper mouse (*Onychomys torridus tularensis*), and San Joaquin pocket mouse (*Perognathus inornatus*). Other species of concern present include Crotch bumble bee (*Bombus crotchii*), Comstock's blue butterfly (*Euphilotes battoides comstocki*), northern California legless lizard (*Anniella pulchra*), loggerhead shrike (*Lanius ludovicianus)*, southern grasshopper mouse (*Onychomys torridus ramona*), Tehachapi pocket mouse (*Perognathus alticolus inexpectatus*), American badger (*Taxidea taxus*), and desert kit fox (*Vulpes marcrotis arsipu*s).

### *Migratory Birds*

Nesting and foraging habitat for birds protected under the Migratory Bird Treaty Act (16 U.S.C. § 703-712) occur within the project site.

### *Jurisdictional Waters*

Four linear drainages potentially subject to the jurisdiction of CDFW under Fish and Game Code Section 1600 et seq., and the Lahontan Regional Water Quality Control Board (RWQCB) under Clean Water Act Section 401 and/or the Porter-Cologne Water Quality Control Act (Water Code § 13000 et seq.) were found during the jurisdiction delineation. No waters potentially subject to the jurisdiction of the U.S. Army Corps of Engineers under Clean Water Act Section 404 were identified on the project site as a result of the jurisdictional delineation.

### *Sensitive Natural Communities*

The project site contains two sensitive natural communities: Joshua tree woodland and scale broom scrub. Joshua tree woodland is considered a sensitive natural community by CDFW. All impacts to this sensitive natural community must be avoided to the maximum extent practicable except for minor incursions as specified in the DRECP CMA LUPA-BIO-SVF-5. Scale broom scrub has a state rarity rank of S3, making it a CDFW sensitive natural community. Scale broom scrub, a subset of the NVC macrogroup Madrean Warm Semi-Desert Wash Woodland/Scrub, does not occur at the project site, but was mapped bordering the eastern edge of the project site. This sensitive natural community has a 200-foot setback specified in the DRECP CMA LUPA-BIO-RIPWET-1 and "will be avoided to the maximum extent practicable, except for allowable minor incursions."

### *Wildlife Movement and Habitat linkages*

The project site does not intersect any known habitat linkages or wildlife movement areas.

### *California Desert Conservation Plan*

Biological resources on BLM lands within the project site are managed under the CDCA Plan of 1980, as amended, including the DRECP. Section 4.4, *Biological Resources*, Subsection 4.4.2, *Environmental Setting*, of this EIR/EA, contains additional details about the affected environment.

## Environmental Consequences

The following is a summary of environmental consequences that may result from implementation of the Alternatives. Section 4.4, *Biological Resources*, Subsection 4.4.4, *Impacts and Mitigation Measures*, of this EIR/EA, contains additional details about the environmental consequences.

**Alternative A – Proposed Action:** The project could result in adverse effects to the following California Rare Plant Rank (CRPR) and/or BLM Sensitive plant species: Robbins' nemacladus, short-bracted bird's-beak, Mt. Pinos larkspur, Latimer's woodland-gilia, Lemmon's syntrichopappus, Joshua tree, silver cholla, and beavertail cactus. Direct adverse effects could 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, water uptake processes as a result of sedimentation around individual plants and their habitat. Implementation of Mitigation Measures MM 4.4-1 and MM 4.4-2 would substantially reduce direct adverse effects to special-status plant species by requiring that a qualified biologist determine presence or absence of these plant species prior to disturbance and establishing avoidance areas or other minimization/mitigation requirements if they are determined to be present. Joshua trees are present on site and to mitigate for unavoidable adverse effects, Mitigation Measure MM 4.4-3 outlines a Joshua Tree Impact Plan. Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-3 would insure that substantial adverse effects would not occur to special-status plant species.

The project could result in an adverse effect to the following federally listed and BLM Sensitive wildlife species: golden eagle, California condor, burrowing owl, and Swainson's hawk. Direct adverse effects include mortality, displacement, foraging habitat loss, and burrow or nest loss. Golden eagle and California Condor would be subjected to potential foraging loss only. Indirect adverse effects include alteration of hydrology, increased noise, lighting, and degradation of habitat. To avoid and minimize adverse effects to these species during project activities, Mitigation Measures MM 4.4-5 through MM 4.4-10, MM 4.7-4, MM 4.9-2, which include biological monitoring, worker training, best management practices (BMPs) to minimize soil erosion, preconstruction surveys including focused surveys for burrowing owl and Swainson's hawk, nest surveys and avoidance, den/burrow avoidance and relocation, and non-toxic herbicide application are recommended. Additionally, during the O&M phase of the project, implementation of Mitigation Measures MM 4.4-9 and MM 4.1-4, detailing avian nesting surveys, 300-foot no-disturbance buffers, and lighting conditions, would reduce adverse lighting effects to wildlife species. Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-10 as well as MM 4.1-4, MM 4.7-4 and MM 4.9-2 would insure that substantial adverse effects would not occur to special-status wildlife species.

The project could result in construction-related adverse effects to nesting birds protected under the MBTA. The removal of vegetation associated with grading or grubbing may result in direct impacts to nests, eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Mitigation Measure MM 4.4-9 requires conducting a pre-construction nesting bird survey if work is scheduled to occur during the nesting season and halt activities that could disturb known nests. Mitigation Measure MM 4.4-9 would substantially reduce impacts to nesting birds.

The project could result in adverse effects to two sensitive natural communities: Joshua tree woodland and scale broom scrub. Implementation of Mitigation Measures MM 4.4-3 and MM 4.4-11, which require a

Joshua Tree Impact Plan and scale broom scrub avoidance have been prescribed to reduce adverse effects on these sensitive natural communities.

The project could cause adverse effects to waters under the jurisdiction of RWQCB, and CDFW. In accordance with Mitigation Measure MM 4.4-12, the project would identify and avoid all ephemeral drainages. Under Mitigation Measure MM 4.4-13, if avoidance of the ephemeral drainages is infeasible, then the project would obtain permits from, RWQCB, and CDFW as applicable. In addition, the implementation of Mitigation Measure MM 4.7-4 would prevent construction site runoff from entering wetlands and other waters through erosion and sediment control measures. With implementation of Mitigation Measures MM 4.4-12, MM 4.4-13, and MM 4.7-4, there would be no substantial adverse effects to jurisdictional waters.

The project would not result in adverse effects on wildlife movement and habitat linkages because the project site is not located within a known wildlife migratory corridor or a wildlife connectivity area, connecting large open space areas throughout the region or locally, as mapped by the California Essential Habitat Connectivity Project. Although the project would introduce structures to the project site that would physically impede wildlife movement in certain areas and directions, the wind energy projects in the area of the project, as well as the areas to the south, which are mainly native plant communities with scattered unpaved roads and residences, provide for largely unrestricted wildlife movements through natural or semi-natural habitats. Therefore, project features that would restrict wildlife movement represent a very small fraction of area available for wildlife movement in the surrounding area.

With Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-3, MM 4.4-5 through MM 4.4-13 as well as MM 4.1-4, MM 4.7-4 and MM 4.9-2, substantial indirect adverse effects would not occur to special-status plant or wildlife species. The project would comply with all applicable biological resources-related CMAs in the DRECP (see Appendix M-2).

**Alternative B – Reduced Acreage Alternative:** Alternative B would avoid disturbance within 4.4 acres of California Juniper Woodland located on-site. Avoidance of this area would reduce the project footprint by approximately 1 percent. While California Juniper Woodland is a native plant community, it is not a sensitive natural community and avoidance is not required by any state, federal, or local plans, policies, or regulations. No other impacts to biological resources would be avoided or reduced by this alternative. Therefore, Alternative B's impacts to biological resources are expected to be substantially the same as identified for Alternative A. All mitigation measures discussed for Alternative A would apply to Alternative B.

**Alternative C – No Action Alternative:** Under the No Action Alternative, existing conditions would remain unchanged and there would be no impacts to biological resources.

## Cumulative Impacts

**Alternative A – Proposed Action:** The geographic scope for cumulative impacts to special-status species is encompassed by the planning area boundaries for the DRECP. The project could contribute to potential cumulative impacts to biological resources from the onset of onsite activities through and including completion of project decommissioning and site restoration. Following the implementation of identified mitigation measures, the project would result in incremental impacts to special-status plant species, special-status wildlife species, migratory birds, sensitive natural communities, and jurisdictional waters. Incremental impacts to special-status plant and wildlife species would result from direct destruction of

special-status plants and wildlife habitats within work areas as well as unavoidable displacement of wildlife. These impacts have already been reduced to the maximum extent feasible and habitat loss effects are mitigated through provision of mitigation measures prescribed for the project. Incremental and cumulative effects to special-status plants and wildlife are further reduced by area-wide conservation management plans, including the DRECP, that designate areas for the preservation and protection of habitats similar to those impacted by the project in order to sustain viable populations of special-status plant and wildlife species. All cumulative projects subject to the DRECP are required to comply with all DRECP CMAs. The purpose of the DRECP is to provide effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects within the DRECP planning area boundaries. Therefore, compliance with the DRECP and prescribed mitigation measures would substantially limit the project's contribution to cumulative impacts.

**Alternative B – Reduced Acreage Alternative:** Cumulative impacts for Alternative B would be substantially the same as described for Alternative A, since Alternative B would construct approximately the same sized solar array field (approximately 4.4 acres smaller than Alternative A).

**Alternative C – No Action Alternative:** Under the No Action Alternative, existing conditions would remain unchanged and there would be no impacts to biological resources. Therefore, Alternative C would not cause or contribute to any cumulative biological impacts.

## Residual Effects

Implementation of all applicable DRECP CMAs and prescribed mitigation measures would substantially offset potential direct, indirect, and cumulative impacts on biological resources. No substantial residual adverse effects would remain after implementation of the DRECP CMAs and mitigation measures.

# Cultural Resources

This section is based in part on information provided in the August 2017, Cultural Resources Survey Report for the Camino Solar Project prepared by SWCA Environmental Consultants. A full copy of the report is provided in Appendix E.

## Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans and standards applicable to cultural resources are identified in Section 4.5, *Cultural Resources*, Subsection 4.5.3, *Regulatory Setting*, of this EIR/EA.

## Affected Environment

Section 4.5, *Cultural Resources*, Subsection 4.5.2, *Environmental Setting*, of this EIR/EA, provides a detailed discussion of the affected environment. Briefly, the cultural resources study identified two isolated artifacts (one historic-period and one prehistoric) within the project site. The historic-period isolate is a hole-in-top food can that dates from the early 1900s to 1940 and likely contained evaporated milk. The prehistoric isolate is a modified chert flake with cortex on both sides. No historic-period architectural resources were identified. Additionally, the cultural resources study indicated that ground surface visibility was excellent during the field survey, and while there is a possibility for buried and currently undocumented archaeological resources within the project site, deep burial of archaeological resources is highly unlikely,

and the absence of surficial artifacts strongly indicates a low potential for buried archaeological resources (SWCA 2017).

As documented in the cultural resources study (SWCA 2017), a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) was not conducted for the project. However, previous recent projects that surround the current project site included SLF searches which yielded negative results for Native American sacred sites (SWCA 2017).

Tribal consultation with five Tribes and two federally unrecognized Indian communities specifically for the Camino Photo-voltaic Solar Project was initiated by the BLM in January 2016, with additional consultation conducted in September 2019. The outreach provided basic information about the proposed project and copies of the negative finding cultural resources investigation report for Tribal review and comment. There were no follow up contacts from the Tribes resulting from the 2016 consultation request nor has anything further has been offered by the recent consultation. BLM had previously consulted with these same Tribes regarding the previous Tylerhorse Wind Energy Project during 2009-2011, also with negative findings.

The Tribes consulted by the BLM for this proposed project are: Bishop Paiute Tribe, Big Pine Tribe of the Owens Valley, Fort Independence Paiute Tribe, Lone Pine Paiute-Shoshone Tribe, and the Timbisha Shoshone Tribe. The two tribal communities in eastern Kern County are: Kern Valley Indian Council and the Tubatulabals of Kern Valley.

## Environmental Consequences

**Alternative A – Proposed Action:** Section 4.5, *Cultural Resources*, Subsection 4.5.4, *Impacts and Mitigation Measures*, of this EIR/EA, contains additional details about the environmental consequences of the project; key findings are summarized here. The project would involve ground disturbance in the form of grading, excavation, and other activities. Such ground-disturbing activity has the potential to directly impact cultural resources. Impacts to historic properties (cultural resources determined or treated as eligible for the National Register) would constitute a significant impact if the impact impairs, alters, or destroys those characteristics that contribute to the resource's eligibility. Two isolated artifacts were identified within the project site, one historic-period and one prehistoric. Given their lack of context and association, isolated artifacts generally are not considered eligible for the National Register. Therefore, no historic properties occur within the project site and the project would not have a significant impact on known cultural resources.

While no historic properties were identified, ground-disturbing activities associated with the project do have the potential to encounter undocumented archaeological resources that could qualify as historic properties. However, the potential for buried archaeological resources is low (SWCA 2017). In the unlikely event that unknown archaeological resources qualifying as historic properties are discovered during project construction, significant impacts to these resources could occur. Mitigation Measures MM 4.5-1 and MM 4.5-2 would require cultural resources sensitivity training for construction workers and appropriate treatment of unearthed archaeological resources during construction. With the implementation of mitigation, substantial impacts to cultural resources would not occur.

There is no indication, either from the archival research or the cultural resources survey for the project, 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 discovered during project construction

activities, the remains could be inadvertently damaged. Implementation of Mitigation Measure MM 4.5-3 and compliance with appropriate federal and state law would ensure that any human remains encountered are appropriately addressed.

**Alternative B – Reduced Acreage Alternative:** Alternative B would avoid disturbance within 4.4 acres of California Juniper Woodland located on-site. Avoidance of this area would reduce the project footprint by approximately 1 percent. Since Alternative B would construct approximately the same sized solar array field as the project, impacts to cultural resources would be substantially similar (but slightly reduced) relative to Alternative A. Given the slight reduction in ground disturbance under Alternative B, there would be a slightly lower possibility of encountering buried archaeological resources. All mitigation measures discussed for Alternative A would apply to Alternative B.

**Alternative C – No Action Alternative:** Under the No Action Alternative, existing conditions would remain unchanged and there would be no impacts to cultural resources.

## Cumulative Impacts

**Alternative A – Proposed Action:** The geographic scope for cumulative effects to cultural resources includes northcentral portion of the Antelope Valley, in the western Mojave Desert. 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 similar environments, landforms, and hydrology would result in similar land use and, thus, site types. Cumulative impacts to cultural resources could occur at any time when the project results in disturbance of the ground surface. Because no historic properties, archaeological resources unique to the region, or other significant cultural resources have been identified within the project site, the project would not cause or contribute to a substantial short- or long-term adverse impacts to known resources. Further, regulatory requirements and mitigation measures included in this EA would reduce potential impacts to any cultural resources that inadvertently may be encountered during project implementation. Implementation of Mitigation Measure MM 4.5-1 requires cultural resources sensitivity training for construction workers. Mitigation Measure MM 4.5-2 requires appropriate treatment of uncovered archaeological resources. Although project-related ground disturbance has the potential to disturb human remains, the implementation of Mitigation Measure MM 4.5-3, as well compliance with appropriate federal and state legislation, would ensure the appropriate protocol is followed with regard to identifying and handling remains. With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-3, the project would not contribute to any substantial adverse cumulative impacts to cultural resources.

**Alternative B – Reduced Acreage Alternative:** Cumulative impacts to cultural resources under alternative B would be substantially similar (but slightly reduced) relative to Alternative A, since Alternative B would construct approximately the same sized solar array field (approximately 4.4 acres smaller than Alternative A) and, therefore, there would be a slightly lower possibility of encountering buried archaeological resources.

**Alternative C – No Action Alternative:** The No Action Alternative would not change baseline conditions and so would not cause or contribute to any cumulative impacts to cultural resources.

## Residual Effects

Implementation of proposed mitigation measures would substantially offset impacts on cultural resources. Following their implementation, no substantial residual adverse effects would remain.

# Greenhouse Gas Emissions

Information in this section is based in part on the January 2019 Air Quality and Greenhouse Gas (GHG) Impact Analysis prepared for the project by Ambient Air Quality and Noise Consulting. A full copy of the report is located in Appendix C.

## Applicable Laws, Regulations, Plans, and Standards

GHGs have different global warming potentials (GWP) (i.e., the amount of heat trapped by a certain mass of a GHG) and, because $CO_2$ is the most common GHG (GWP of 1), GHG emissions are quantified and reported as $CO_2$ equivalents ($CO_2e$). Independent of NEPA, but pursuant to 40 CFR Part 98 (the Mandatory Reporting of Greenhouse Gases Rule), USEPA requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 (metric tons) MT of $CO_2e$ emissions per year (USEPA 2013a). Consistent with this requirement, this analysis compares the estimated GHG emissions for the project and alternatives to the federal GHG mandatory emissions reporting threshold of 25,000 MT per year to determine whether the GHG emissions could contribute substantially to global climate change.

Agencies within the Department of the Interior are required by Secretarial Order No. 3289 to consider potential impacts associated with climate change, including potential changes in flood risk, water supply, sea-level rise, wildlife habitat and migratory patterns, invasion of exotic species, and potential increases in wildfires (U.S. Secretary of the Interior 2009). Climate change is expected to result in additional potential changes that could affect the human and natural environment that are relevant to the project. The potential effect of climate change on the project is discussed qualitatively.

Additional laws, regulations, plans and standards that are applicable to GHG emissions are identified in Section 4.8 *Greenhouse Gas Emissions*, Subsection 4.8.3, *Regulatory Setting*, of this EIR/EA.

## Affected Environment

GHG emissions have the potential to adversely affect the quality of the human environment on a cumulative basis, for example by contributing to global climate change, which potentially affects sea-level rise (coastal flooding) resiliency, rainfall and snowfall (changes in water supply and runoff), and temperatures and habitats (biological and agricultural resources). Because of the nature of environmental consequences from GHGs on global climate change, NEPA requires lead agencies to evaluate the cumulative impacts of GHGs on a global basis.

Traditional sources of electricity, e.g., fossil-fuel-fired power plants, generate GHG emissions of primarily carbon dioxide ($CO_2$), with smaller amounts of nitrous oxide ($N_2O$), and methane ($CH_4$) primarily from unburned natural gas. No industrial, residential, or other emitters of GHGs are currently located or operating at the project site. The ecosystem on-site, made up of plants and soils (including biological soil crusts), provides ongoing natural carbon uptake/sequestration (GHG reduction).

## Environmental Consequences

**Alternative A – Proposed Action:** The project would generate GHG emissions from heavy-duty diesel off-road equipment; trucks used to transport fuel and water, and to deliver materials and equipment to and from the project site and by worker commutes during all phases of the project, and the battery storage thermal management system during project operations. Indirect GHG emissions associated with proposed water use during construction would also be generated.

The total construction-related $CO_2e$ emissions estimated for the project's 9-month construction period is 1,661 MT $CO_2e$. When amortized over the 35-year life of the project, this equates to 55 MT $CO_2e$ per year. GHG emissions that would be generated as a result of decommissioning/restoration would be expected to be similar to the emissions estimated for construction because decommissioning/restoration would involve similar equipment and worker trips as proposed during construction. Therefore, the total amortized emissions that would be associated with construction and decommissioning/restoration of the project is 110 MT $CO_2e$ per year. These values do not exceed the NEPA threshold of 25,000 MT $CO_2e$ per year. Therefore, under NEPA, construction of the project would not result, either directly or indirectly, in a substantial adverse effect related to the generation of GHG emissions.

The annual operational emissions would be 122 MT $CO_2e$. Therefore, the annual operational emissions of 122 MT $CO_2e$ plus the amortized construction and decommissioning/restoration emissions of 110 MT $CO_2e$ per year represent the total annual amortized GHG emissions of 232 MT $CO_2e$ that would be generated by the project. This amount would also not exceed the NEPA threshold of 25,000 MT $CO_2e$ per year. In addition, the amount of carbon savings that would be derived from implementation of the project, as opposed to implementation of a carbon-based power plant, is estimated at 808,115 MT $CO_2e$ per year. Therefore, under NEPA, operation of the project would not result, either directly or indirectly, in a substantial adverse effect related to the generation of GHG emissions.

Climate change is anticipated to affect the frequency and intensity of extreme weather events, including causing large storm events and more severe droughts in western watersheds. The project site and its vicinity could experience an increase in the intensity of high rainfall and flood events, which could result in greater stormwater runoff and flash flooding, and an increase in soil erosion on-site and sedimentation on-site and downstream from the site. Implementation of a stormwater management plan would minimize or avoid the degradation of the project from increased runoff, especially during major storm events.

**Alternative B – Reduced Acreage Alternative:** Alternative B would avoid disturbance within 4.4 acres of California Juniper Woodland located on-site. Avoidance of this area would reduce the project footprint by approximately 1 percent. Since Alternative B would construct approximately the same sized solar array field as the project, it would generate approximately the same quantities of GHG emissions and would involve the same construction, operation and maintenance, decommissioning and restoration activities as Alternative A.

**Alternative C – No Action Alternative:** Under the No Action Alternative, existing conditions would remain unchanged and there would be no GHG impacts.

## Cumulative Impacts

**Alternative A – Proposed Action:** 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 GHG impact would be worldwide. As stated above, the project's annual operational emissions would be 122 MT $CO_2e$. Therefore, the annual operational emissions of 122 MT $CO_2e$ plus the amortized construction and decommissioning/restoration emissions of 110 MT $CO_2e$ per year represent the total annual amortized GHG emissions of 232 MT $CO_2e$ that would be generated by the project. This amount would not exceed the NEPA threshold of 25,000 MT $CO_2e$ per year. In addition, the amount of carbon savings that would be derived from implementation of the project, as opposed to implementation of a carbon-based power plant, is estimated at 808,115 MT $CO_2e$ per year. Therefore, under NEPA, operation of the project would not result, either directly or indirectly, in a substantial adverse effect related to the generation of GHG emissions.

In addition to the project's incremental GHG emissions, other cumulative projects in the Indian Wells Valley area listed in Table 3-5, *Cumulative Projects List*, in Chapter 3, *Project Description*, of this EIR/EA, largely consist of utility-scale solar power generation facilities, which would also result in carbon savings derived from implementation of these solar projects, as opposed implementation of a carbon-based power plants.

The project site and immediate vicinity contain only ephemeral drainages and washes, and surface waters occur only during substantial precipitation events, when surface runoff occurs. No perennial streams or other perennial waterways are on-site. The project would not rely on surface water for water supply during construction or operation, but would instead rely on groundwater for water supply during both construction and operation. Climate change is expected to result in some degree of reduction of precipitation, and periods of drought could increase, resulting in an overall reduction in the availability of water in the project area. With reduced precipitation within the project area and its vicinity, some degree of associated reduction in groundwater recharge from rainfall could occur but would is unlikely to be affected by the project because the project's demand would represent a small portion of the established safe yield of the basin.

**Alternative B – Reduced Acreage Alternative:** Cumulative impacts for Alternative B would be substantially the same as described for Alternative A since Alternative B would construct approximately the same sized solar array field (approximately 4.4 acres smaller than Alternative A). Therefore, the level of construction, operation and maintenance, decommissioning and restoration activities would be approximately the same. Therefore, Alternative B would not cause or contribute to a substantial cumulative effect relating to GHG emissions.

**Alternative C – No Action Alternative:** The No Action Alternative would have no impact relating to GHG emissions since development of a solar project would not occur on the site and existing carbon sequestration would remain unchanged. Accordingly, the No Action Alternative would not cause or contribute to any cumulative impact relating to GHG emissions.

## Residual Effects

Because no mitigation measures are required, residual impacts would be the same as direct, indirect, and cumulative impacts.

# Paleontological Resources

This section is based in part on information provided in the August 2017 Cultural Resources Survey Report prepared for the project by SWCA Environmental Consultants. A full copy of the report is provided in Appendix E.

## Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans and standards that are applicable to paleontological resources are identified in Section 4.7, *Geology and Soils*, Subsection 4.7.3, *Regulatory Setting*, of this EIR/EA.

## Affected Environment

As depicted and described in SWCA's Cultural Resources Survey Report provided Appendix E, of this EIR/EA. he majority of the project area is mapped as older Quaternary alluvium (Qoa), while a small section at the eastern-most margin is mapped as younger Quaternary alluvium (Qa). Older Quaternary alluvium dates to the Pleistocene (10,000 years–2.6 million years old) and consists of poorly bedded alluvial gravel and sand. Younger Quaternary alluvium dates to the Holocene (recent–10,000 years ago) and consists of alluvial silt, sand, and gravel (SWCA 2017). Older Quaternary alluvial deposits have produced numerous fossil finds throughout the Mojave Desert and are considered to have high sensitivity for paleontological resources. Due to their age, Younger Quaternary alluvium sediments are too young to preserve fossil resources and have low paleontological sensitivity. However, younger Quaternary alluvium sediments typically overlie the highly sensitive older Quaternary alluvium, and so ground-disturbing activities that exceed the depth of the younger sediments are at risk of impacting fossils that may be present in these deeper, sensitive sediments. The depth of the younger Quaternary alluvium has not been determined in the project site.

## Environmental Consequences

**Alternative A – Proposed Action:** A cultural resources assessment was conducted for the project site that included a search of paleontological records (SCWA 2017). The records search conducted by the Natural History Museum of Los Angeles County and a literature review revealed a rich history of fossil finds in the geologic units in and around the project site. While the Young Alluvium found on the eastern portion of the site has a low paleontological sensitivity, the Old Alluvium that covers most of the project site and underlies the Young Alluvium has a record of preserving significant fossil specimens. The literature and map review, as well as the paleontological records search failed to indicate the presence of significant paleontological resources on site; however, geologic units underlying the project have a high paleontological sensitivity with respect to their potential to yield fossil remains. In the Old Alluvium., which is mapped across most of the project site, significant fossils could occur at or near the surface. Any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. Potential impacts to paleontological resources would not be substantial with implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7 because these measures require a paleontological resources awareness training program for all construction personnel, paleontological monitoring during construction, and a protocol for ceasing construction, and avoiding and evaluating paleontological resources if discovered during construction.

**Alternative B – Reduced Acreage Alternative:** Alternative B would avoid disturbance within 4.4 acres of California Juniper Woodland located on-site. Avoidance of this area would reduce the project footprint by approximately 1 percent. Since Alternative B would construct approximately the same sized solar array field as the project, impacts to paleontological resources would be substantially the same as described for Alternative A. Therefore, construction, operation and maintenance, decommissioning and restoration activities would be the same as Alternative A.

**Alternative C – No Action Alternative:** Under the No Action Alternative, existing conditions would remain unchanged and there would be no impact to paleontological resources.

## Cumulative Impacts

**Alternative A – Proposed Action:** 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 Action. Given similarities in geologic formations, this area is expected to contain similar types of paleontological resources. The temporal scope is in perpetuity because direct impacts to paleontological resources are permanent. Ground disturbance associated with the project, if not properly mitigated, could impact important paleontological resources. Potential impacts to paleontological resources include the loss of non-recoverable and nonrenewable significant fossils and associated scientific data. However, implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7 will ensure that the project would not cause substantial adverse effects to paleontological resources. Most of the other projects within the cumulative scenario are solar and other renewable energy projects, and so would present similar risks to paleontological resources as the project to the extent they are proposed in areas of paleontological sensitivity. Authorization from the BLM and/or Kern County also would be required to implement the majority of the other potentially cumulative projects and it is reasonable to assume that these decision-making agencies would impose comparable protections on the development of those other projects as are recommended in the Mitigation Measures MM 4.7-5 through MM 4.7-7. With such protections in place, any adverse cumulative impacts to paleontological resources would not be substantial.

**Alternative B – Reduced Acreage Alternative:** The contribution of Alternative B to cumulative impacts to paleontological resources would be substantially the same as under Alternative A, since Alternative B would construct approximately the same sized solar array field (approximately 4.4 acres smaller than Alternative A). Therefore, any adverse cumulative impacts of Alternative B to paleontological resources would not be substantial.

**Alternative C – No Action Alternative:** Under the No Action Alternative, existing conditions would remain unchanged and the project would not contribute to cumulative impacts to paleontological resources.

## Residual Effects

Once ground disturbance has been completed at the site, there no longer would be a risk to paleontological resources, and any residual impacts remaining after the implementation of mitigation would be minor.

# Soils

This section is based in part on the August 2017, Desktop Geotechnical Investigation prepared for the project by Barr Engineering. A full copy of the report is provided in Appendix G.

## Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans and standards that are applicable to geologic and mineral resources are identified in Sections 4.7, *Geology and Soils*, Subsection 4.7.3, *Regulatory Setting*, and 4.12, *Mineral Resources*, Subsection 4.12.3, *Regulatory Setting*, of this EIR/EA.

## Affected Environment

The United States Department of Agriculture (USDA) Soil Conservation Service, National Cooperative Soil Survey classifies soils throughout the country. According to the geotechnical report, the USDA soil units identified on the project site include the Arizo gravelly loamy sand, Cajon loamy sand, Hanford coarse sandy loam and gravelly sandy loam, and Ramona sandy loam (Barr 2017). These soils are well drained or excessively drained loams with moderate to high infiltration rates. As noted above, surficial deposits consist primarily of Quaternary alluvial deposits from coalescing alluvial fans extending out from the upper mountain regions to the north and northwest. The alluvial deposits generally consist of coarse sand, gravel, and cobble alluvial fan deposits that range from tens to hundreds of feet thick in the upper northern region of the site and thicken toward the south (Barr 2017). The alluvium tends to be coarse in drainage channels and areas closer to the mountains that become finer grained away from the channels and at the lower end of the alluvial fans.

## Environmental Consequences

**Alternative A – Proposed Action:** Section 4.7, *Geology and Soils*, Subsection 4.7.4, *Impacts and Mitigation Measures*, of this EIR/EA, contains additional details about the environmental consequences of the project; key findings are summarized here. Site preparation activities for the construction of the project that would disturb surface soils include vegetation and debris removal, grading, excavation and trenching. Ground disturbance during project construction and decommissioning/restoration has the potential to result in substantial impacts related to soil erosion, sedimentation, and discharge of debris from the site if preventative mitigation measures are not implemented. As part of Mitigation Measure MM 4.7-3, grading would be minimized to the maximum extent feasible as part of project design. Project implementation would also be subject to a drainage plan that would minimize the potential for changes in on-site drainage patterns that could increase erosion and sedimentation (See Section 4.10, *Hydrology and Water Quality*, of this EIR/EA for more details). Because project construction would disturb well over an acre of ground, the project operator would also need to conform to the requirements of Kern County's National Pollutant Discharge Elimination System (NPDES) Program through the preparation of a stormwater pollution prevention plan (SWPPP) that would include erosion control and sediment control BMPs designed to prevent disturbed soils from moving off site.

Project operations may include the periodic cleaning of the solar panels with water. However, infrequent water application, the minimal amount of water applied (approximately 5 acre-feet per year) and the site's flat topography is not expected to generate quantities and velocities of runoff sufficient to substantially erode soils. No impacts to erosion are expected to occur during the operational phase of the project. Therefore, implementation of Mitigation Measures MM 4.7-3, and MM 4.7-4 are recommended to minimize erosion to the maximum extent feasible during pre-construction activities, such as grading and disking, and during project construction activities. Impacts during decommissioning/restoration are

expected to be the same as anticipated for construction and the same mitigation measures recommended for construction are recommended for project decommissioning/restoration.

**Alternative B – Reduced Acreage Alternative:** Alternative B would avoid disturbance within 4.4 acres of California Juniper Woodland located on-site. Avoidance of this area would reduce the project footprint by approximately 1 percent. Since Alternative B would construct approximately the same sized solar array field as the project, impacts to soils would be substantially the same as Alternative A. This reduction in site acreage by approximately 4.4 acres would slightly reduce, but not demonstrably change, the potential for soil erosion impacts to affect the quality of the human environment.

**Alternative C – No Action Alternative:** Under the No Action Alternative, existing conditions would remain unchanged and there would be no impacts to soils.

## Cumulative Impacts

**Alternative A – Proposed Action:** The cumulative setting for soil erosion consists of existing, planned, proposed, and reasonably foreseeable land use conditions in the region. Individual projects are required to comply with applicable codes, standards, and permitting requirements (e.g., preparation of a SWPPP) to mitigate erosion impacts. Development of the project site has the potential to contribute to soil erosion and loss of topsoil during project activities. These potential impacts would be mitigated through the implementation of the SWPPP and BMPs during construction and decommissioning/restoration phases and, for the reasons discussed above, would not be substantial during operation and maintenance phase due to site conditions. Impacts associated with erosion are mitigated on a project-by project basis, such that the overall cumulative impact would be minimal. With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-4, the project would not contribute to any cumulative impacts for soils, geologic, seismic hazards or related events. The project would have no impact to mineral resources, and so would not cause or contribute to any cumulative impact in this regard.

**Alternative B – Reduced Acreage Alternative:** Cumulative impacts for Alternative B would be substantially the same as described for Alternative A, since Alternative B would construct approximately the same sized solar array field (approximately 4.4 acres smaller than Alternative A).

**Alternative C – No Action Alternative:** The No Action Alternative would have no impact relating to soils and would not cause or contribute to any cumulative impacts to this resource.

## Residual Effects

Implementation of the SWPPP and BMPs would assure than any remaining residual impact relating soils would be minor.

# Visual Resources

## Applicable Laws, Regulations, Plans, and Standards

BLM uses Visual Resources Management (VRM) classifications to classify scenery based on the scenic quality, visual sensitivity, and distance zones (the distance from which the landscape is most commonly viewed). Each VRM class is defined by a specific management objective that describes the acceptable level

of change to visual resources. Change in the resource is measured though implementation of the contrast rating procedure and by assessing change in visual resource inventory values. Contrast is measured by evaluating basic design elements (form, line, color, and texture) in accordance with the BLM's Handbook H-8431-1 Visual Resource Contrast Rating (BLM 1986). If the contrast rating reveals nonconformance of the Proposed Action or an alternative with assigned VRM class objectives, and mitigation measures are insufficient to bring it into compliance, then the design would need to be modified to the greatest extent possible to achieve conformance. If a project cannot be mitigated and/or redesigned to meet the VRM class objectives, the application may be denied, or BLM may require the project to be modified or relocated.

According to the DRECP Gateway mapping tool, the project would occupy lands managed per VRM Class IV objectives. VRM Class IV areas are considered to have low visual value. The objective of VRM Class IV is to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

## Affected Environment

The project site is located at the western edge of the Antelope Valley, in the southern central portion of Kern County. The aesthetic features of the Antelope Valley include the southeastern flank of the Tehachapi Mountains, characterized by terrain that gradually slopes form northwest to southeast. Land uses in the area include undeveloped land, residences, grazing, and wind energy farms. The Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail or PCT) is located approximately 1 mile west of the project site's western border and approximately 1.8 miles to the north of the project site's northern border. The closest eligible scenic highway to the project site is Angeles Crest Highway (SR 2), which is approximately 46 miles to the south (Caltrans 2019). There is minimal scattered off-site fixed lighting in the project area from nighttime residential and street lighting, as well as blinking lighting from nearby wind turbines. Another minor source of nighttime lighting in the area is passing headlights from motor vehicles.

The project site is located on 383 acres of both privately and publicly owned land that is relatively flat with a gentle slope to the south. The project site is characterized as having native scrub vegetation, along with Joshua tree woodland habitat and non-native grasses (SWCA Environmental Consultants 2018). The nearest residence is approximately 1.2 miles west of the project site. There is one small, partially defined channel within the western portion of the site where an access road and solar arrays are proposed, although the majority of water reaches the project site via sheet flow (Aztec Engineering Group 2016). Portions of the project site are zoned for agriculture and grazing uses and the site has been used for agricultural practices in the past (HDR 2017). For additional details about the affected environment, see Section 4.1, *Aesthetics*, Subsection 4.1.2, *Environmental Setting*, of this EIR/EA.

## Environmental Consequences

**Alternative A – Proposed Action:** Section 4.1, *Aesthetics*, Subsection 4.1.4, *Impacts and Mitigation Measures*, of this EIR/EA, contains all referenced figures showing key observation points (KOPs) and additional details about the environmental consequences of the project; key findings are summarized here. Visual simulations were prepared for the project to determine its effects on existing visual resources. Of the six KOPs that were selected within the project area, the project would only be visible from one location

on the PCT, which is a National Scenic Trail (KOP 4), and from an existing intersection (KOP 1). While the project would be visible from KOP 4 along the PCT, the quality of scenic vistas from both of these KOPs is considered moderate to low given the existing solar facilities and wind turbines already visible from those locations. Although the project would add another industrial element to the view from all KOPs, the project's solar facilities would be consistent with the visual character of existing energy development in the area. Additionally, the view of the project from all KOPs would be partially obstructed by existing wind turbines. Existing topography would block visibility of the project from the other four KOPs. Further, implementation of Mitigation Measure MM 4.1-1 through MM 4.1-6 would reduce impacts by requiring trash abatement, color-treating project facilities, maintaining natural vegetation, shielding and directing lighting downward, and minimizing glare.

Temporary lighting may be used during construction but would be designed to provide the minimum illumination needed to achieve work objectives, and would be directed downward and shielded (see Mitigation Measure MM 4.1-4) to focus illumination on the desired areas only and minimize light trespass.

**Alternative B – Reduced Acreage Alternative:** Alternative B would avoid disturbance within 4.4 acres of California Juniper Woodland located on-site. Avoidance of this area would reduce the project footprint by approximately 1 percent. This reduction would not significantly reduce visual impacts when compared to Alternative A. Thus, impacts to visual resources would be substantially the same as Alternative A and mitigation measures MM 4.1-1 through MM 4.1-6 would be required.

**Alternative C – No Action Alternative:** Under the No Action Alternative, existing conditions would remain unchanged. No impact to visual resources would result.

## Cumulative Impacts

**Alternative A – Proposed Action:** According to Table 3-5, *Cumulative Projects List*, in Chapter 3, *Project Description*, of this EIR/EA, several utility-scale solar and wind energy projects are proposed throughout the Antelope Valley within the project vicinity. These projects, in combination with the project, have the potential to impact the area's visual resources. The quality of the scenic vistas from the PCT, which are already considered moderate to low in part due to existing energy development and scattered residences, are not expected to be reduced substantially by multiple distant energy facilities. These projects would be consistent with the existing VRM Class IV classification and visual character of the area. Further, for four of the six KOPs from which photo simulations were prepared, existing topography at least partially blocks views of the low-lying valley in which the project and some of these energy projects would be located. The resulting cumulative effects on visual resources would not be substantial.

**Alternative B – Reduced Acreage Alternative:** Cumulative impacts for Alternative B would be substantially the same as described for Alternative A since Alternative B would construct approximately the same sized solar array field (approximately 4.4 acres smaller than Alternative A).Therefore, construction, operation and maintenance, decommissioning and restoration activities would be the same as Alternative A. Further, the project infrastructure and activities that would visible from KOPs 1 and 4 pursuant to the Proposed Action also would be visible as part of Alternative B.

**Alternative C – No Action Alternative:** The No Action Alternative would result in no impact to visual resources, and so would not cause or contribute to any cumulative impacts in this regard.

## Residual Effects

Following the implementation of Mitigation Measures MM 4.1-1 through MM 4.1-6, any residual effects on visual resources would be minor.

# Water Resources

This section is based, in part, on information provided in the September 2016 Preliminary Drainage Report, November 2016 Water Demand Memorandum prepared for the project by Aztec TYSPA Group, and August 2019 Water Supply Assessment prepared by AECOM. Full copies of these reports are provided in Appendices I-1 through I-3.

## Applicable Laws, Regulations, Plans, and Standards

Laws, regulations, plans and standards that are applicable to water resources are identified in Section 4.10, *Hydrology and Water Quality*, Subsection 4.10.3, *Regulatory Setting*, of this EIR/EA.

## Affected Environment

The project site is located in the Antelope Valley Hydrologic Unit (HU) in the southwestern corner of the Regional Water Quality Control Board's South Lahontan Hydrologic Region. The Antelope Valley HU covers approximately 1.5 million acres (2,400 square miles) in the southwestern part of the Mojave Desert in Southern California. The Antelope Valley HU is mostly located in Los Angeles County and Kern County, with a small part in San Bernardino County. Bounded by the San Gabriel Mountains to the south and southwest, the Tehachapi Mountains to the northwest, and a series of hills and buttes that generally follow the San Bernardino County Line to the east, the Antelope Valley HU forms a well-defined triangular point at its western edge. The Antelope Valley HU elevation ranges from 2,300 to 3,500 feet above mean sea level (amsl).

The Antelope Valley HU generally lacks defined natural and improved channels outside of the foothills, and is subject to unpredictable sheet flow patterns. In general, groundwater flows northeasterly from the mountain ranges to the dry lakes. Due to the relatively impervious nature of the dry lake soil and high evaporation rates, water that collects on the dry lakes eventually evaporates rather than infiltrating into the groundwater.

Within the Antelope Valley HU, the project site is located in the Willow Springs Hydrologic Area (HA). The drainage features associated with the Willow Springs HA are minor surface waters and washes that are not well defined. There is no active flowing water on the site. Most drainage flow originating in the study area infiltrates into the soil in the vicinity of the study area. During prolonged extreme storm events, water flows may reach Rosamond Lake. The site is located entirely within Flood Zone "X", areas of minimal flooding and no standing water (Aztec 2016a).

Groundwater in the Antelope Valley HU is used for both public water supply and local irrigation. The main aquifers in the Basin are gravels, sands, silts, and clays, all derived from granitic parent material from the surrounding mountains. Public-supply wells in the Basin are anywhere from 360 to 700 feet deep. Groundwater recharge in the Antelope Valley is primarily runoff from surrounding mountains, as well as direct infiltration from irrigation, sewer, and septic systems. Groundwater quality is generally good and

suitable for domestic, agriculture and industrial uses although there have been reported concentrations of volatile organic compounds, semi volatile organic compounds, nitrates, pesticides and inorganics that exceed drinking water standards in several wells located throughout the Basin. Naturally occurring arsenic is also found in the Neenach subbasin in concentrations exceeding drinking water levels (AECOM 2019).

As described above, the project site is located within the Willow Springs subunit of the Basin, northeast of the Neenach subunits, which reportedly has groundwater wells that draw from depths ranging between 200 to 300 feet below surface level (Aztec 2016b). Water supply wells that could be sources of water supply for the project are located in the Oak Creek (Cal Portland Well) and Neenach (T09NR14W22A1 and T09NR14W22B1 wells) subbasins (AECOM 2019).

## Environmental Consequences

**Alternative A – Proposed Action:** Potential impacts on water quality from erosion and sedimentation are expected to be localized and temporary during construction and decommissioning/restoration. Stormwater runoff from the project site does not discharge to waters of the United States (i.e., the project area drains to a terminal basin that is not hydrologically connected to a navigable waterway). Nonetheless, because the project would disturb more than 1 acre of land area and stormwater would not be contained on-site or discharge into a terminal drainage facility, the County would require the project proponent to prepare and implement a SWPPP for the project (see Mitigation Measure MM 4.7-4). The SWPPP would include BMPs to be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby drainages. As noted in Section 4.9, *Hazards and Hazardous Materials*, of this EIR/EA, 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.

During the O&M phase, the project would be required to adhere to the Kern County Development Standards and Kern County Building Code provisions, 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 off-site discharge. Routine structural BMPs are intended to address water quality impacts related to drainage that are inherent in development.

Although the Antelope Valley HU as a whole is still in an overdraft condition, the project site is located in the western portion of the basin in the Willow Springs subbasin where groundwater levels are rising. The total projected water demand for the project over 25 years is 315 acre-feet (AECOM 2019). Water required during construction would most likely be supplied from an existing off-site well on the California Portland Cement Company property (Cal Portland Well) located approximately 0.44 mile southeast of the project site although there are also wells located approximately 6.6 and 7 miles southeast of the site in the Neenach subbasin that could be a source of water supply (AECOM 2019). The project's operational water requirements would be relatively small (approximately 5 acre-feet per year) and as land use in the basin continues to be converted from higher water intensive uses such as agricultural to less demanding water uses such as renewable energy projects, water in storage appears to be recovering. The project's demand

would represent a small portion of the established safe yield of the basin, and would not substantially deplete groundwater levels in comparison to existing conditions.

The project would include limited grading such that off-site flow that enters the site would continue to flow south through the site much as it does currently. According to the preliminary drainage study completed for the site, a poorly defined channel within the western portion of the site that loses definition completely as it crosses the site. The project would require design and implementation of retention basins for each of the seven sub-drainage areas to capture high storm flows. With implementation of Mitigation Measure MM 4.10-1, the project design would include retention basins and other stormwater management features consistent with existing regulatory requirements that can minimize any erosion or sedimentation such that no adverse effects would occur.

**Alternative B – Reduced Acreage Alternative:** Alternative B would avoid disturbance within 4.4 acres of California Juniper Woodland located on-site. Avoidance of this area would reduce the project footprint by approximately 1 percent. This reduction would slightly, but not significantly, reduce water demand, drainage impacts, water quality impacts, erosion or sedimentation when compared to Alternative A. Alternative B impacts to water resources would be substantially the same as Alternative A and Mitigation Measures MM 4.10-1, MM 4.7-4 and MM 4.9-1 would be required.

**Alternative C – No Action Alternative:** Under the No Action Alternative, existing conditions would remain unchanged and there would be no impacts to water resources.

## Cumulative Impacts

**Alternative A – Proposed Action:** The cumulative projects are all located within the Antelope Valley Hydrologic Unit. The Santa Clara Superior Court has established a safe threshold for water extraction from the Antelope Valley Groundwater Basin to be 110,000 acre-feet per year. A review of data available for several solar projects that have entered into the environmental compliance phase indicated that many of the cumulative scenario projects would not result in a net reduction in groundwater levels at their respective sites, because the proposed use would be less than existing use (frequently agriculture). Many of the other solar energy projects in the cumulative list have also replaced agricultural uses where greater water supply needs were necessary. As land use in the basin continues to be converted from higher water intensive uses such as agricultural to less demanding water uses such as renewable energy projects, water in storage appears to be recovering. Regardless, the adjudication of the basin means that water use will be managed by the Watermaster in accordance with the court judgement and it is expected that additional storage and recharge to the basin will result from adjudication requirements and regional water banking (AECOM 2019). The incremental water use by the project together with the incremental demands of other projects in the cumulative scenario would not result exceed the safe yield threshold for the basin.

As discussed above, the solar projects proposed in Kern County would be required to implement a SWPPP and associated BMPs to minimize potential for release of pollutants and sediment into surface water. Therefore, cumulative impacts associated with water quality degradation would not be substantial.

With respect to erosion, drainage, and flooding, the project would implement Mitigation Measure MM 4.10-1 and MM 4.7-4, which would minimize direct impacts on erosion, drainage, and flooding by requiring a final drainage plan and Soil Erosion and Sedimentation Control Plan. It is anticipated that other projects in the cumulative scenario would be required to implement similar measures to minimize erosion, drainage, and flooding related impacts because these projects are located on land under the jurisdiction of Kern

County and would be beholden to the same County review and standards as the project. Therefore, cumulative impacts on erosion, drainage, and flooding are not anticipated to be substantial or adverse either in the short or long term.

**Alternative B – Reduced Acreage Alternative:** Cumulative impacts for Alternative B would be substantially the same as described for Alternative since Alternative B would construct approximately the same sized solar array field (approximately 4.4 acres smaller than Alternative A). Therefore, construction, operation and maintenance, decommissioning and restoration activities would be the same as Alternative A.

**Alternative C – No Action Alternative:** The No Action Alternative would result in no impact to water resources, and so would not cause or contribute to any cumulative impact in this regard.

### Residual Effects

The adherence to regulatory requirements and implementation of mitigation measures that require drainage control features be included as part of project design would substantially reduce the severity of potential adverse effects on water quality and hydrologic resources. Any residual impacts would be minor.

# 11.6 Consultation and Coordination and List of Preparers

The project is located on private land as well as public land administered by the BLM. Federal, state, and local agencies, including agencies with permitting authority over aspects of the project, have been and will continue to be consulted as part of the BLM's review of the project.

## Consultation and Coordination

### National Historic Preservation Act Section 106 Consultation

National Historic Preservation Act Section 106 consultation between the Bureau of Land Management and the State Historic Preservation Officer (SHPO) is occurring and the BLM has requested that the SHPO concur that there would be No Adverse Effects to any existing Historic Property, nor to any potentially eligible Historic Properties.

### Endangered Species Act Section 7 Consultation

FESA directs all federal agencies to participate in conserving threatened and endangered species. Specifically, section 7(a)(1) of the FESA charges federal agencies to aid in the conservation of listed species, and section 7(a)(2) requires the agencies, through consultation with the USFWS, to ensure their activities are not likely to jeopardize the continued existence of listed species, or destroy or adversely modify their critical habitat. The project would not impact any federally listed threatened or endangered species (see Biological Resources discussion in section 11.5). Specifically, email correspondence from

BLM and the USFWS has stated that desert tortoise is considered absent from the project site.[2] Therefore, consultation under FESA Section 7 is not required for this project.

# List of Preparers

Though individuals have primary responsibility for preparing sections of this EA, the document is an interdisciplinary team effort. In addition, internal review of the document occurred throughout its preparation. Specialists at the BLM's field and district offices, state office, and Washington office reviewed the analysis and supplied information, as well as provided document preparation oversight.

**TABLE 11-3: LIST OF PREPARERS**

| Name | Position | Primary Responsibility |
|---|---|---|
| **BLM – Ridgecrest Office** | | |
| Paul Rodriguez | Realty Specialist | Project Management |
| Donald Storm | Archaeologist | Cultural and Paleontological Resources |
| Caroline Woods | Planning and Environmental Coordinator | NEPA Compliance |
| Martha Dickes | Visual Resources Specialist | Visual Resources |
| **BLM – Moreno Valley** | | |
| Kim Marsden | District Botanist | Biological Resources |
| **Environmental Science Associates and Consultant Team** | | |
| Cristina Gispert | Senior Managing Associate | Project Management |
| Janna Scott | Director | Project Director |
| Michael Bever | Cultural Resources Program Manager | Cultural Resources |
| Jaclyn Catino-Davenport | Senior Associate Biologist | Biological Resources |
| Eric Schniewind | Senior Technical Associate | Public Health and Safety, Water Resource, Geology, Mineral Resources |
| Maria Hensel | Associate | Environmental Analyst |
| Jeffery Goodson | Managing Associate | Air Quality, Noise, Climate Change |
| Jessie O'Dell | Associate | Socioeconomics and Environmental Justice |
| Jason Nielsen | Managing Associate | GIS Analysis |

[2] Bransfield 2016. Email from Ray Bransfield to Pauline Roberts on November 22, 2016.

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