Draft
Environmental Impact Report

SCH# 2019090215

Volume 1

Chapters 1 through 10

AVEP Solar Project
By Chaparral Solar, LLC and Rabbitbrush Solar, LLC

SPA 1, Map 231-18
ZCC 3, Map 231-18
CUP 1, Map 231-18
SPA 2, Map 231-18
SPA 25, Map 232
SPA 27, Map 232
ZCC 40, Map 232
ZCC 41, Map 232
CUP 33, Map 232
CUP 34, Map 232
CUP 35, Map 232
CUP 36, Map 232
SPA 26, Map 232
SPA 28, Map 232
Nonsummary Vacations of Public Access Easements (Chaparral Site), Map 232
Nonsummary Vacations of Public Access Easements (Rabbitbrush Site), Map 232

Kern County
Planning and Natural Resources Department
Bakersfield, California

January 2021

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

Planning
Community Development
Administrative Operations

January 11, 2021

FILE: SPA 1, Map 231-18; ZCC 3, Map 231-18; CUP 1, Map 231-18; SPA 2, Map 231-18; SPA 25, Map 232; SPA 27, Map 232; ZCC 40, Map 232; ZCC 41, Map 232; CUP 33, Map 232; CUP 34, Map 232; CUP 35, Map 232; CUP 36, Map 232; SPA 26, Map 232; SPA 28, Map 232; Nonsummary Vacations of Public Access Easements (Chaparral Site), Map 232; Nonsummary Vacations of Public Access Easements (Rabbitbrush Site), Map 232

ADDRESSEE LIST (See Distribution List)

Re: Draft Environmental Impact Report for the AVEP Solar Project by Chaparral Solar, LLC and Rabbitbrush Solar, LLC (PP18141)

Dear Interested Party:

Kern County has prepared a Draft Environmental Impact Report (Draft EIR) for the above-noted land use applications to allow for the construction and operation of two solar photovoltaic power generating facilities and associated facilities that would generate a combined total of approximately 250 megawatts (MW) of renewable electrical energy and approximately 2,000 megawatt-hours (MWh) of energy storage capacity on 1,406 acres of privately-owned land.

The project site is located approximately 5.5 miles west of the unincorporated community of Rosamond. The project site is general bound by Avenue of the Stars to the north, 100th Street West and a transmission line easement utilized by the Los Angeles Department of Water and Power to the east, Rosamond Boulevard to the south, and 130th Street West to the west. The project site is located within portions of Section 18 of Township 9 North, Range 13 West, San Bernardino Base and Meridian (SBBM), and within portions of Sections 9, 10, 12, 13, 14 15, and 23 of Township 9 North, Range 14 West, SBBM, County of Kern, State of California.

The project proponents are requesting:

a) three (3) Specific Plan Amendments (SPA) to the Willow Springs Specific Plan to designations from 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to 5.3 (Maximum 10 Units per Net Acre) on 10 acres (SPA 1, Map 231-18), 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to 5.3 (Maximum 10 Units per Net Acre) on 591.96 acres and 5.3/4.4/2.1 (Maximum 10 Units per Net Acre/Comprehensive Planning Area/Seismic Hazard) to 5.3/2.1 (Maximum 10 Units per Net Acre/Seismic Hazard) on 72.15 acres (SPA 25, Map 232), and 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to 5.3 (Maximum 10 Units per Net Acre) on 40 acres (SPA 27, Map 232);

b) three (3) Zoning Classification Changes (ZCC), from the existing Zone District of E (2 ½) RS FPS to A FPS on 10 acres (ZCC 3, Map 231-18), from the existing Zone District of E (2 ½) RS FPS to A FPS on 120 acres (ZCC 40, Map 232), and from the existing Zone District of E (2 ½) RS FPS, E (5) RS FPS and E (10) RS FPS to A FPS on 222 acres (ZCC 41, Map 232);
c) three (3) Conditional Use Permits (CUP), to allow for the construction and operation of a 125 megawatt solar photovoltaic electrical generating facility within the A (Exclusive Agriculture) zone district on the Chaparral Site (CUP 1, Map 231-18, and CUP 33, Map 232), and to allow for the construction and operation of a 125 megawatt solar photovoltaic electrical generating facility within in an A (Exclusive Agriculture) District on the Rabbitbrush Site (CUP 35, Map 232), pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance;
d) two (2) CUPs each to allow for the construction and operation of a communication tower (Section 19.12.030.F) in an A District (CUP 34, Map 232; CUP 36, Map 232);
e) two (2) requests for nonsummary vacation of public access easements on the project site, one corresponding to each of the two solar facilities; and
f) three (3) SPAs to the Circulation Element of Willow Springs Specific Plan to remove Section and mid-section line road reservations as follows:
    1) The portion of the Section line between Section 18, T9N, R13W and Section 13, T9N, R14W lying north of Truman Road, the south half of the Section line between Section 18, T9N, R13W and Section 7, T9N, R13W, lying west of property owned by the City of Los Angeles Department Water and Power (SPA 2, Map 231-18);
    2) The west quarter of the Section line between Section 13, T9N, R14W and Section 12, T9N, R14W, the east three quarters of the south half of the Section line between Section 13 T9N,R14W and Section 12 T9N/R14W; the east-west mid-section line of Section 13, T9N, R14W, the north-south mid-section line of Section 13, T9N, R14W; the east one-eighth of the south half of the east-west mid-section line of Section 14, T9N, R14W SPA 26, Map 232).
    3) The south half of the north-south mid-section line of Section 10, T9N, R14W; the north half of the north-south mid-section line of Section 15, T9N, R14W; the north half of the east-west mid-section line of Section 15, T9N, R14W; the west half of the east half of the west half of the south half of the east-west mid-section line of Section 14, T9N, R14W (SPA, Map 232).
g) The project's permanent facilities would include service roads, two communication towers, communication cables, overhead and underground transmission lines, and operations and maintenance facilities.

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

If we have not received a reply from you by **February 25, 2021, at 5:00 P.M.**, we will assume that you have no comments regarding this Draft EIR.

Should you have any questions regarding this project, please do not hesitate to contact me at (661) 862-8612 or via email at CatesR@kerncounty.com.

Sincerely,

Randall Cates, Planner III
Advanced Planning Division

SPA1; ZCC3:CUP1, Map #231-18
WO #PP18141 (EIR - AVEP Solar)
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Sc 12/18/20

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
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San Luis Obispo, CA 93408

Santa Barbara Co Resource Mgt Dept
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Santa Barbara, CA 93101

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

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

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

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

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Edwards AFB, CA 93524

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Palm Springs, CA 92262

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San Francisco, CA 94105

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

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Sacramento, CA 95814-2920

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500 South Main Street
Bishop, CA 93514

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1400 - 10th Street, Room 222
Sacramento, CA 95814

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Sacramento, CA 95814-3528

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Geologic Energy Management Division
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Bakersfield, CA 93309

State Dept of Conservation
Office of Land Conservation
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Sacramento, CA 95814

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Bakersfield, CA 93309

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Planning & Analysis Division
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San Francisco, CA 94102

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Control Board/Lahontan Region
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Victorville, CA 92392

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San Joaquin Dist.
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Fresno, CA 93726

State Dept of Water Resources
Div. Land & Right-of-Way
P.O. Box 942836
Sacramento, CA 94236

Kern County
Agriculture Department

Kern County Administrative Officer

Kern County Public Works Department/
Building & Development/Floodplain

Kern County Public Works Department/
Building & Development/Survey

Kern County
Env Health Services Department

Kern County Fire Dept
David Witt, Fire Chief

Kern County Fire Dept
Cary Wright, Fire Marshall

Kern County Library/Beale
Local History Room

Kern County Library/Beale
Andie Sullivan

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

Kern County Parks & Recreation

Kern County Sheriff's Dept
Administration

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

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

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

Rosamond Municipal Advisory Council
P.O. Box 626
Rosamond, CA 93560

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

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

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

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

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

East Kern Air Pollution
Control District

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

AT&T California
OSP Engineering/Right-of-Way
4901 Ashe Road
Bakersfield, CA 93313

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

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

Center on Race, Poverty
& the Environment
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Center on Race, Poverty
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P.O. Box 935
Mojave, CA 93502

Native American Heritage Council
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Bakersfield, CA 93308-9477

Southern California Gas Co
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Chatsworth, CA 91313-6511

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P.O. Box 401
Weldon, CA 93283

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Weldon, CA 93283

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Fairmont Town Council
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Southern California Edison
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State Water Resources Control Board
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Coordinator
Office of Strategic Integration
721 - 19th Street, Room 427
Denver, CO 80202

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
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Strategic Plans, S3, NTC
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Fort Irwin, CA 92310

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Charlotte, NC 28273

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Regional Community & Liaison Officer
1220 Pacific Highway
San Diego, CA 92132-5190

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

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Palm Springs, CA 92263-2190

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First Solar, Inc.
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California Native American
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Mojave Town Council
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Beth Boyst
Pacific Crest Trail Program Manager
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Vallejo, CA 94592

Anitra Kass
Pacific Crest Trail Association
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Bermuda Dunes, CA 92203

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Arvin, CA 93203

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Bakersfield, CA 93301

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

California City Planning Dept.
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California City, CA 93515

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City of Maricopa
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Maricopa, CA 93252

City of McFarland
401 West Kern Avenue
McFarland, CA 93250

City of Ridgecrest
100 West California Avenue
Ridgecrest, CA 93555

City of Shafter
336 Pacific Avenue
Shafter, CA 93263

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

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

DRAFT ENVIRONMENTAL IMPACT REPORT
NOTICE OF AVAILABILITY FOR PUBLIC REVIEW

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

A public hearing has been scheduled with the Kern County Planning Commission to receive comments on the document on: **March 11, 2021**, 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 **February 25, 2021**. 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: EIR 03-18; AVEP Solar Project by Chaparral Solar, LLC and Rabbitbrush Solar, LLC (PP18141); Specific Plan Amendment 1, Map 231-18; Zoning Classification Change 3, Map 231-18; Conditional Use Permit 1, Map 231-18; Specific Plan Amendment 2, Map 231-18; Specific Plan Amendment 25, Map 232; Specific Plan Amendment 27, Map 232; Zoning Classification Change 40, Map 232; Zoning Classification Change 41, Map 232; Conditional Use Permit 33, Map 232; Conditional Use Permit 34, Map 232; Conditional Use Permit Change 35, Map 232; Conditional Use Permit 36, Map 232; Specific Plan Amendment 26, Map 232; Specific Plan Amendment 28, Map 232; Nonsummary Vacations of Public Access Easements (Chaparral Site), Map 232; Nonsummary Vacations of Public Access Easements (Rabbitbrush Site), Map 232.

Project Location: Approximately 5.5 miles west of the unincorporated community of Rosamond; also being located within portions of Section 18 of Township 9 North, Range 13 West, San Bernardino Base and Meridian (SBBM), and within portions of Sections 9, 10, 12, 13, 14 15, and 23 of Township 9 North, Range 14 West, SBBM, County of Kern, State of California.

Project Description: The project proponents are requesting:

a) three Specific Plan Amendment to the Willow Springs Specific Plan to designations from 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to 5.3 (Maximum 10 Units per Net Acre) on 10 acres (SPA 1, Map 231-18), 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to 5.3 (Maximum 10 Units per Net Acre) on 591.96 acres and 5.3/4.4/2.1 (Maximum 10 Units per Net Acre/Comprehensive Planning Area/Seismic Hazard) to 5.3/2.1 (Maximum 10 Units per Net Acre/Seismic Hazard) on 72.15 acres (SPA 25, Map 232), and 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to 5.3 (Maximum 10 Units per Net Acre) on 40 acres (SPA 27, Map 232);
b) three (3) Zoning Classification Changes (ZCC), from the existing Zone District of E (2 ½) RS FPS to A FPS on 10 acres (ZCC 3, Map 231-18), from the existing Zone District of E (2 ½) RS FPS to A FPS on 120 acres (ZCC 40, Map 232), and from the existing Zone District of E (2 ½) RS FPS, E (5) RS FPS and E (10) RS FPS to A FPS on 222 acres (ZCC 41, Map 232);
c) three Conditional Use Permits, to allow for the construction and operation of a 125 megawatt solar photovoltaic electrical generating facility within the A (Exclusive Agriculture) zone district on the Chaparral Site (CUP 1, Map 231-18, and CUP 33, Map 232), and to allow for the construction and operation of a 125 megawatt solar photovoltaic electrical generating facility within in an A (Exclusive Agriculture) District on the Rabbitbrush Site (CUP 35, Map 232), pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance;
d) two Conditional Use Permits, each to allow for the construction and operation of a communication tower (Section 19.12.030.F) in an A District (CUP 34, Map 232; CUP 36, Map 232);
e) two requests for nonsummary vacation of public access easements on the project site, one corresponding to each of the two solar facilities; and

f) three Specific Plan Amendments to the Circulation Element of Willow Springs Specific Plan to remove Section and mid-section line road reservations as follows:
   1) the portion of the Section line between Section 18, T9N, R13W and Section 13, T9N, R14W lying north of Truman Road, the south half of the Section line between Section 18, T9N, R13W and Section 7, T9N, R13W, lying west of property owned by the City of Los Angeles Department Water and Power (Specific Plan Amendment 2, Map 231-18);
   2) the west quarter of the Section line between Section 13, T9N, R14W and Section 12, T9N, R14W, the east three quarters of the south half of the Section line between Section 13 T9N,R14W and Section 12 T9N/R14W; the east-west mid-section line of Section 13, T9N, R14W, the north-south mid-section line of Section 13, T9N, R14W; the east one-eighth of the south half of the east-west mid-section line of Section 14, T9N, R14W (Specific Plan Amendment 26, Map 232).
   3) the south half of the north-south mid-section line of Section 10, T9N, R14W; the north half of the north-south mid-section line of Section 15, T9N, R14W; the north half of the east-west mid-section line of Section 15, T9N, R14W; the west half of the east half of the west half of the south half of the east-west mid-section line of Section 14, T9N, R14W (Specific Plan Amendment 28, Map 232).

The project's permanent facilities would include service roads, two communication towers, communication cables, overhead and underground transmission lines, and operations and maintenance facilities.

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

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

For further information, please contact Randall P. Cates, Planner III ((661) 862-8612).

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

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

THE ROSAMOND WEEKLY NEWS

RPC:cp (1/6/21)

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)

SPA1; ZCC3:CUP1, Map #231-18
WO #PP18141 (EIR - AVEP Solar)
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ANG ROSA TAN FAMILY TRUST
3360 LANTERN TRL
RICHMOND IN 47374-7171

358 010 08 00 5
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5809 S CHARITON AV
LOS ANGELES CA 90056

358 160 20 00 3
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ROSAMOND CA 93560

358 141 19 00 2
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1542 VIKING WY
SOLVANG CA 93463

359 233 02 00 9
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TEHACHAPI CA 93561-8271

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6548 SO NEWLIN AV
WHITTIER CA 90601

358 201 12 00 8
ALEXANIAN SORIN
2967 GLENDOWER AV
LOS ANGELES CA 90027

315 151 08 00 0 **DUP**
ARENS ALFONS & JANS ROBERT
DOBBENWAL 90
ADDRESS UNKNOWN

358 201 01 00 6
ATKINSON WILLIAM K & DEANNA S ET AL
1834 W AVENUE K9
LANCASTER CA 93534-6291

315 213 04 00 9
BACANI LEONARDO V & MARIA GLADYS
43510 HONEYBEE LN
LANCASTER CA 93536

359 011 33 00 1
BAYANGOS APOLONIO & ESTELITA P
104 SUMMERRAIN DR
S SAN FRANCISCO CA 94080-3281

358 151 29 00 4
BERTHOLD TOM W
3530 PENDLETON WY
LAND O LAKES FL 34639-4774

358 202 06 00 8
BLUE CUBE VENTURE LLC
13089 PEYTON DR C473
CHINO HILLS CA 91709

358 360 03 00 2
BOUTROS MAGED
6334 W AVENUE J2
LANCASTER CA 93534

358 201 07 00 4
BUTENBERG SEBASTIAN JOERG & CLAUDIA
PO BOX 56867
SHERMAN OAKS CA 91413-6867

358 202 03 00 9
CANDEE FAMILY TRUST
2352 HORSESHOE CT
SANTA ROSA CA 95405-8134

358 230 01 00 8
ALFARO ROGER J
511 CALLE FORTUNA
WALNUT CA 91789-1707

358 192 03 00 7
ARMSTRONG FAMILY TRUST
30132 VIA BORICA
RANCHO PALOS VE CA 90275-4412

358 380 14 00 0
AUSTIN LEONARD E TRUST
923 BEACHWOOD NE
GRAND RAPIDS MI 49505

374 041 31 00 5
BAILEY IRENE I
4841 COLUMBUS ST APT 14C
BAKERSFIELD CA 93306-1392

358 152 21 00 7
BEALS PATRICIA D REVOCABLE LIVING TRUST
752 ARBOL VERDE ST
CARPINTERIA CA 93013-2508

359 233 03 00 2
BISHOP HELEN
801 THACKER PASS DR
SPARKS NV 89441-7625

358 360 16 00 0 **SITE**
BOBADILLA JEREMY GEORGE & TING TING
PO BOX 56867
SHERMAN OAKS CA 91413-1867

358 360 13 00 1
BROWN LINDA
23761 WAGON WHEEL CI
ATHENS IL 62613

358 202 01 00 3
CALLENDER JAMES RICHARD
117 PIZARRO DR
HOT SPRINGS VIL AR 71909-7927

358 202 12 00 5
CASEY JAMES
12605 CALIFA ST
VALLEY VILLAGE CA 91607-1008

358 192 10 00 7
CASILLAS ROSALBA FMLY LIV TR
209 STIMSON AV
LA PUENTE CA 91744-4553

252 151 16 00 5
CASIO MELCHORA GAVIOLA
1647 1ST ST
MANHATTAN BEACH CA 90266-7003

358 250 06 00 9
CEJA MARICELA OCHOA
PO BOX 56867
SHERMAN OAKS CA 91413

358 152 45 00 7
CHAK LOLA E
916 PALO ALTO DR
ARCADIA CA 91006

252 341 48 00 3 **SITE**
CHAPARRAL SOLAR LLC
135 MAIN ST FLR 6
SAN FRANCISCO CA 94105

252 152 03 00 4
CHEUNG KWOK TUNG & TSUI FUNG
1671 ABAJO DR
MONTEREY PARK CA 91754-2307

374 041 04 00 7
CHEVEZ JOSE ROLANDO & MONICA
9871 SAHARA ST
ROSAMOND CA 93560

358 250 19 00 7
CHHANG WEN HUNG & WU KUN CHIH
3179 W TEMPLE AV # 100
POMONA CA 91768

252 151 31 00 8
CHIN TOMMY K
2195 VALDINA ST
HENDERSON NV 89044-1671

252 151 14 00 9
CHOI STEPHEN
1919 CITRON ST # 708
HONOLULU HI 96826

374 041 10 00 4
CHRISTENSEN GLENDA G
HC 60 BOX 1004
ROUND MOUNTAIN NV 89045-8901

358 152 47 00 3
CHUENCHOB KONTEE ET AL
19331 STRATHERN ST
RESEDA CA 91335-1047

358 230 02 00 1
CHUNG MIKE J
6528 HEDDING ST
LOS ANGELES CA 90045-1215

315 160 01 00 5
CITY EST #6 PROP OWNERS ASSOC
P O BOX 4085
LOS ANGELES CA 90051

252 341 02 00 9
CITY OF LOS ANGELES D W P
P O BOX 51111 RM 633
LOS ANGELES CA 90051-0100

252 341 50 00 8
CITY OF LOS ANGELES D W P
PO BOX 51111
LOS ANGELES CA 90051-5700

315 151 10 00 5
CITY OF LOS ANGELES D W P
111 N HOPE ST RM 340
LOS ANGELES CA 90012-2607

359 051 22 00 1
CITY OF LOS ANGELES D W P
PO BOX 51111 RM 633
LOS ANGELES CA 90051-5700

359 051 51 00 5 **DUP**
CITY OF LOS ANGELES D W P
111 N HOPE ST
LOS ANGELES CA 90012-2607

359 031 54 00 8 **DUP**
CITY OF LOS ANGELES DWP
PO BOX 51111
LOS ANGELES CA 90051-5700

359 051 30 00 4
COLE MICHAEL & NORA
2929 W 100TH ST
ROSAMOND CA 93560-7376

358 380 07 00 0
COPELAND BOBBY D & JOYCE LEE
7924 QUINCE RD
NEOSHO MO 64850

252 152 34 00 4
COSTA CLEMENT TRUST
28330 PONTEVEDRA DR
RANCHO PALOS VE CA 90275-1430

252 152 33 00 1
COSTA STANLEY & DOLORES
980 WEST OLIVER ST
SAN PEDRO CA 90731

358 152 24 00 6
COX FAMILY TRUST
PO BOX 56867
SHERMAN OAKS CA 91413-6867

358 230 03 00 4
CRAIG JOHN C
1479 GREEN RIVER RD
WILLIAMSTOWN MA 01267-3127

358 151 34 00 8
DABBAS MUWAFAK
1746 W AVENUE J15 APT 4
LANCASTER CA 93534-4749

358 010 06 00 9
DANNEKER MICHAEL J II TRUST
1732 LA PAZ RD
ALTADENA CA 91001-3317

358 152 27 00 5
DARROW SHILOH & STEPHANIE
8359 ELK GROVE FLORIN RD STE 103
SACRAMENTO CA 95829-9298

358 141 21 00 7
DAUSEL LEO L FAMILY TRUST
1717 S PACIFIC ST
OCEANSIDE CA 92054-5849

358 202 07 00 1
DAVENPORT MICHAEL ALLAN
3207 W 166TH ST
TORRANCE CA 90504-1729

358 191 12 00 6
DUNCAN PAUL K & VALERIE J
FAMILY TRUST
3104 LOVELAND WY
BAKERSFIELD CA 93309

358 152 10 00 5
ENGELMAN ALICE
11030 KIOWA RD
APPLE VALLEY CA 92308

358 240 28 00 0
ESTRADA DORIS DIANE LIVING
TRUST
37321 PASEO VIOLETA
MURRIETA CA 92563-3704

358 250 13 00 9
FLEMING KENNETH & GWELDA TR
13322 THISTLE AV
NORWALK CA 90650

359 052 29 00 9
FS LAND HOLDING CO LLC
350 W WASHINGTON ST STE 600
TEMPE AZ 85281-1496

358 160 28 00 7
GANDY MURRY P & JANICE V
2999 GREYSTONE DR
PACE FL 32571

358 152 46 00 0
GARRETT FMLY TR
1560 NORSTAR LN
FALLBROOK CA 92028

358 151 37 00 7
GEVORKIAN MARINE
317 W WINDSOR RD
GLENDALE CA 91204

315 213 06 00 5
GREATER PACIFIC HOLDINGS LTD
1849 KINNELOA MESA RD
PASADENA CA 91107

374 041 32 02 6
DERA FADI
731 BAGNALL ST
GLENDORA CA 91740

358 141 31 00 6
EDF RENEWABLES DEV INC
15445 INNOVATION DR
SAN DIEGO CA 92128

358 152 12 00 1
EQUITY TR CO CUSTDN
PO BOX 56867
SHERMAN OAKS CA 91413-1867

358 152 22 00 0
EVERETTE SUZANNE E
PO BOX 50
LAKE ARROWHEAD CA 92352-0050

252 341 15 00 7
FRERICHS BARBARA J LIV TR
3152 THAYER BRIDGE CI
IDAHO FALLS ID 83402-4658

358 230 05 00 0
GALLARDO MICHAEL L &
GIOCONDA
502 CHARMINGDALE
DIAMOND BAR CA 91765

374 041 34 00 4
GARCIA EDWARD & MARY L
P O BOX 1078
GARDEN GROVE CA 92842

358 151 26 00 5
GERAILI ALIREZA & ALAMDARI
FARAH N
4008 PRESTWICK PL
PALMDALE CA 93551

252 341 46 00 7
GORDON & ANNE GILL LLC
PO BOX 1467
ARROYO GRANDE CA 93421-1467

358 202 05 00 5
GROSS PHILIP
6901 OLD YORK RD APT D405
PHILADELPHIA PA 19126

358 151 08 00 3
DISTLER BRUCE R
4089 CRYSTAL CIR # 204
AURORA CO 80014

359 051 27 00 6
EDISEN FAMILY REVOCABLE TRUST
37455 AVENIDA BRAVURA
TEMECULA CA 92592-8908

358 152 50 00 1
ESPIRITU ESMERALDA R
27623 NUGGET DR
CANYON COUNTRY CA 91387-5829

358 010 09 03 5
EYHERABIDE LAND CO LLC
5284 KENT DR
BAKERSFIELD CA 93306

359 011 36 00 0 **SITE**
FS LAND HOLDING CO LLC
135 MAIN ST FLR 6
SAN FRANCISCO CA 94105-8113

358 152 28 00 8
GALOUSTIAN ROY KHOSROW
9740 LA CANADA WY
SUNLAND CA 91040-1659

252 341 21 00 4
GARCIA JESUS
8641 GLENOAKS BL # 115
SUN VALLEY CA 91352

358 191 01 00 4
GERWITZ TR
3424 SUNSET HILL DR
WEST COVINA CA 91791

358 160 18 00 8
GRACE JAMES E & LETHA
P O BOX 1436
FALLBROOK CA 92088

358 010 09 07 1
GUERRANT FMLY TR
28518 BURROUGH NO RD
TOLLHOUSE CA 93667-9727

358 030 03 00 6
HA NORTH ROSAMOND LLC
1906 TOWNE CENTRE BL STE 370
ANNAPOLIS MD 21401

358 152 13 00 4
HOFSTADTER AGNES SURVIVORS TRUST
5410 RHODES AV APT 209
VALLEY VILLAGE CA 91607

358 152 14 00 7
HUBER FAMILY TRUST
970 PASEO LA CRESTA
PALOS VERDES ES CA 90274-2053

358 380 13 00 7
INGALSBE MARVIN L & BETTY J
1391 MISSION RD
MADISON GA 30650-9408

358 201 03 00 2
JACOB PATRICIA D
7 THE MEADOWS
NEWNAN GA 30265

358 380 04 00 1
JEFFRIES THOMAS B & CATHLEEN F ET AL
712 955 CAT CUT HILL RD
JANESVILLE CA 96114-8550

358 160 34 00 4
JOBSON KENNETH OTTO & BETTY MARY REV TR
6522 NE MONTE VISTA DR
BAINBRIDGE ISLA WA 98110-4262

359 233 04 00 5
JOSEPH JOSEPH T TRUST
13700 MARINA POINTE DR # 1404
MARINA DEL REY CA 90292-9268

358 151 28 00 1
KEY EXEMPTION TR & EDITH M TR
1770 N EUCLID AV
UPLAND CA 91784

315 214 01 00 7
KRAJNIAK REVOCABLE LIVING TRUST
PO BOX 4037
ALPINE WY 83128-3906

359 031 55 00 1
HA WILLOW SPRINGS LLC
1166 AVE OF THE AMERICAS FLR 9
NEW YORK NY 10036

359 190 01 00 4
HOLIDAY ESTATES NO I
6824 MELROSE AV
HOLLYWOOD CA 90038

252 151 18 00 1
HUFFMAN SHIRLEY A TR
2578 CHAPMAN EAST
FULLERTON CA 92631

358 201 08 00 7 **DUP**
IREI SHINGI & TOMIKO
ADDRESS UNKNOWN

252 151 17 00 8
JACOBI A & J TR
200 MARTINEZ PL
PAGOSA SPRINGS CO 81147-7972

358 240 31 00 8
JENKINS GENEVA
3116 GINGERWOOD LN
LANCASTER CA 93536

358 202 11 00 2
JOHNSTON JERROLD S & EILEEN A
719 E SAND DOLLAR DR
SANDY UT 84094-4765

252 152 02 00 1
JUNG JESSIE H & CLAYTON D
1066 GRANDRIDGE AV
MONTEREY PARK CA 91754

315 151 09 00 3
KIANI FARHAD
18375 VENTURA BL # 704
TARZANA CA 91356-4230

358 152 17 00 6
KRECHNYAK DREW & SANDY TRUST
9705 E S-14 AV
LITTLEROCK CA 93543

359 233 01 00 6
HERRERA GUADALUPE V JR & MARY
1860 BRIDGEGATE ST
WESTLAKE VLG CA 91361

315 214 03 00 3
HOME EQUITY OPTIONS LLC
10401 VENICE BL 283
LOS ANGELES CA 90034

358 240 29 00 3
HULL LYLE J & JANET M
3056 CONSTITUTION DR
W VALLEY CITY UT 84119

358 201 06 00 1
ISRAWI NADIA MARIE
7809 BAIRNSDALE ST
DOWNEY CA 90240-2618

358 010 01 00 4
JAVADIAN TR
3108 PADDINGTON RD
GLENDALE CA 91206-1355

358 160 32 00 8
JOBSON FAMILY REVOCABLE TRUST
3068 CEDARHURST CT
CAMERON PARK CA 95682

358 191 02 00 7
JONES WENDEL W
3809 W RIVER ROCK ST
SPRINGFIELD MO 65807-7536

358 250 18 00 4
KARMANN DAVID M
3682 W EDGEWOOD BL
HERNANDO MS 38632-9316

358 152 42 00 8
KOROPITZER FMLY TR
11 FLORA SPGS
IRVINE CA 92602-2412

358 151 27 00 8
KURLAK J WAYNE & PATRICIA S FAMILY TRUST
617 S BROADWAY AV # 2
REDONDO BEACH CA 90277

374 041 07 00 6
KUROKAWA PATRICIA N
431 SEFTON AV # B
MONTEREY PARK CA 91754

358 230 04 00 7
KUSHNARENKO LIZA LIVING TRUST
27256 CAPILANO DR
SUN CITY CA 92586-3030

252 341 45 00 4 **DUP**
L A CITY OF
PO BOX 51111
LOS ANGELES CA 90051-0100

252 341 47 00 0
L A CITY OF
PO BOX 51111 # 1031
LOS ANGELES CA 90051-5700

358 030 31 00 7 **DUP**
L A CITY OF
PO BOX 51111 RM 1031
LOS ANGELES CA 90051-5700

374 041 09 00 2
LADD PATRICK & JENNIFER
2860 W 100TH ST
ROSAMOND CA 93560-7076

358 151 07 00 0
LAIONE JOHN
2900 S BENTLEY AV
LOS ANGELES CA 90064-4006

358 260 07 00 5
LE JOHN M & NGUYEN THANH T
21607 W 99TH ST
LENEXA KS 66220

358 160 10 00 4 **SITE**
LEE ANDREW W & SARAH P
39 OAK GATE PL
PLEASANT HILL CA 94523

359 232 04 00 8
LEE HARLAN SR
4050 DON LUIS DR
LOS ANGELES CA 90008-4225

252 151 19 00 4
LEONARD DAVID H
10550 DUNLAP CROSSING RD # 36
WHITTIER CA 90606-1267

359 235 03 00 6
LINGAD MARIA AGOSTA H
PO BOX 7654
RENO NV 89510-7654

358 152 43 00 1
LIU JANE R WU
3770 FAIRMEADE RD
PASADENA CA 91107-2226

358 192 01 00 1
LONGWILL SHIRLEY A
1224 VISCANO DR
GLENDALE CA 91207

359 051 20 00 5
LUDOWITZ THOMAS J TRUST
20901 WOLFE PL
WOODLAND HILLS CA 91364-4540

358 240 32 00 1
LYNCH PATRICIA L SURVIVORS TRUST
1222 30TH ST
BAKERSFIELD CA 93301-2302

358 160 17 00 5
MALLA FLORIDA C
45552 GADSDEN AV
LANCASTER CA 93534-1858

315 213 01 00 0
MANNING D A & OSBORNE IAN
4629 GOLDWOOD AV
BAKERSFIELD CA 93306

315 214 02 00 0
MANUEL AMADO & TERESITA ET AL
3915 WEST 177TH ST
TORRANCE CA 90504

359 235 02 00 3
MARTINEZ JOSE & BERTHA ET AL
11000 NE CHANTAL CT
DONALD OR 97020-8706

252 151 01 00 1
MASSON FAMILY TRUST
1229 W 22ND ST
SAN PEDRO CA 90731-4928

358 202 02 00 6
MC COURT FAMILY TRUST
61193 SW TALL TIMBER CT
BEND OR 97702-3214

315 213 03 00 6
MC GINNIS CHRIS
3335 GREENVILLE DR
SIMI VALLEY CA 93063-1248

359 235 05 00 2
MC GRATH JAMES M & CAROLINE S
26355 YOLANDA ST
LAGUNA HILLS CA 92656

359 051 28 00 9
MENDOZA ARMANDO M & ESTELA P REV LIV TR
25639 GALE DR
STEVENSON RANCH CA 91381

252 151 15 00 2
MENDOZA MANUEL & IGNACIA INA
2516 SUNDIAL DR
CHINO CA 91709

358 030 07 00 8
MINN FAMILY TRUST
526 PAINTBRUSH LN
LOUISVILLE CO 80027-8671

358 030 30 00 4 **DUP**
MINN FAMILY TRUST
ADDRESS UNKNOWN

358 201 11 00 5
MORGAN KIM & ANNE
2070 BOMBAY DR
LAKE HAVASU CTY AZ 86404

359 232 03 00 5
MUDD HUGH M & GERALDINE L
27250 MURRIETA RD SP 180
SUN CITY CA 92586

358 380 05 00 4
MURTAUGH FAMILY TRUST
5020 SHADOW CANYON RD
TEMPLETON CA 93465-9714

358 152 40 00 2 **SITE**
NAGAL BELLIE P ET AL
12379 COHASSETT ST
NORTH HOLLYWOOD CA 91605

252 151 02 00 4
NAKASHIMA BEATRICE N TRUST
7572 ONTARIO DR
HUNTINGTON BEAC CA 92648-1426

358 152 48 00 6
NAPPALLI ANGEL ANABELLE
1590 ADAMS AV U 4328
COSTA MESA CA 92628-4633

358 240 35 00 0
NAZARI RAYMOND R
10333 MT GLEASON AV
SUNLAND CA 91040-3120

358 152 34 00 5
NUYEN NOI
10121 WINTER SUN LN
KNOXVILLE TN 37922-2400

358 250 17 00 1
OBEDIAN FEREIDOUN & PARV
8424 SANTA MONICA BL STE A
WEST HOLLYWOOD CA 90069-4267

359 051 31 00 7
ODAR FAM TR
26064 BALDWIN PL
STEVENSON RANCH CA 91381

358 250 10 00 0
ORBITA CLEOFAS F & ISABEL
1949 SAMANTHA LN
VALRICO FL 33594-5146

358 250 15 00 5
P MORGAN INVESTMENTS INC
309 N OTIS ST
GENTRY AR 72734

359 234 01 00 3
PALM HORIZON
4640 DUNAS LN
TARZANA CA 91356-4602

359 011 32 00 8
PARK MYENG H LIVING TRUST
16411 BOSQUE DR
ENCINO CA 91436-3719

358 380 06 00 7
PARRA ISMAEL JR & ROSA A
13071 IRONE AV
ROSAMOND CA 93560

358 191 10 00 0
PECORARO FAMILY TRUST
605 W MAPLE ST
SAN DIEGO CA 92103

252 152 16 00 2
PETERSEN ERIK J & KATHLEEN
P O BOX 1074
ROSAMOND CA 93560

358 260 08 00 8
PETERSON DORIS
13818 LANNING DR
WHITTIER CA 90605-2631

252 341 49 00 6
PICKLE THOMAS A & GENEVA L REV LIV TR
PO BOX 1565
SUGAR LAND TX 77487-1565

359 051 25 01 9
PIECUCH DOROTHY A & MICHAEL R
PO BOX 56867
SHERMAN OAKS CA 91413-1867

359 051 50 00 2
PILLA A&M 2009 FAMILY TRUST
21591 KANAKOA LN
HUNTINGTN BCH CA 92646

252 152 17 00 5
PITTS KATHLEEN LOUISE
13373 TUTELO RD
APPLE VALLEY CA 92308-4300

315 213 05 00 2
PNW HOLDINGS LLC
166 W WASHINGTON ST STE 730
CHICAGO IL 60602

358 191 03 00 0
POLANCO JOEL
1735 W ALAMO CT
CHANDLER AZ 85224

359 234 02 00 6
POOLEY ROGER D & JUDY G
2055 WEST AVENUE M-12
PALMDALE CA 93551-2336

252 151 03 00 7
QUAN ONA G TR
630 N GRAND AV #310
LOS ANGELES CA 90012

358 010 04 00 3 **SITE**
RABBITBRUSH SOLAR LLC
135 MAIN ST FLR 6
SAN FRANCISCO CA 94105-8113

358 160 29 00 0 **SITE**
RABBITBRUSH SOLAR LLC
135 S MAIN ST FLR 6
SAN FRANCISCO CA 94105

358 192 12 00 3
RALEY TAMARA L
6349 HWY 202 E
FLIPPIN AR 72634

358 152 39 00 0 **SITE**
RASSAM JEANNETTE
9353 ENCINO AV
NORTHRIDGE CA 91325

358 010 09 06 2
REINOSO EDGAR
P O BOX 1664
SANTA CLARITA CA 91386

358 160 03 00 4
REIVER HOLDINGS USA 001 LLC
PO BOX 56867
SHERMAN OAKS CA 91413-1867

358 152 35 00 8 **DUP**
REYES AURORA L
P O BOX 29414
LOS ANGELES CA 90029

358 152 23 00 3
REYES AURORA L & SAN JUAN S T
P O BOX 29414
LOS ANGELES CA 90029

358 151 24 00 9
REYNOLDS HELEN I
4213 FARISS LN
EL SOBRANTE CA 94803-2213

358 152 49 00 9
RICAFORT FMLY TR
1518 WAILEA ST
WEST COVINA CA 91792

315 214 04 00 6
RIVET MARIA
17 BRISTOL RD
LEWISTON ME 04240-5913

359 051 24 01 6
ROBINSON CHARLES RAY & OLGA C TRUST
21452 ALAMO ST
WOODLAND HILL CA 91364

358 201 02 00 9
RODRIGUEZ JOSE DE JEUS & CATALINA
PO BOX 56867
SHERMAN OAKS CA 91413-1867

358 160 19 00 1
ROME WILLIAM EST
33 ROCK RUN RD
EAST WINDSOR NJ 08520-3048

358 380 16 00 6
RONTAL DEVELOPMENT L P
12334 W SUNSET BL
LOS ANGELES CA 90049-3916

358 360 15 00 7
ROPER JOHN & JOHANNA T FAMILY TRUST
28609 LEACREST DR
RANCHO PLS VERD CA 90274

252 152 32 00 8
ROY GILLI JOSEPH TRUST
PO BOX 944
BLUE JAY CA 92317-0944

374 041 33 00 1
ROZUMOV ALIK & FAINA TR
18812 EDLEEN DR
TARZANA CA 91356-4811

358 151 25 00 2
SAFRANEK RAINY
6635 BACKUS RD
MOJAVE CA 93501-7106

252 151 30 00 5
SAIDI GHOLAM R & MEIMAN LAI
735 PLATEAU AV
MONTEREY PARK CA 91755

358 152 06 00 4
SANDOVAL ANTONIO P & MARLENE
412 N MACNEIL ST
SAN FERNANDO CA 91340-2440

358 152 07 00 7
SANDOVAL MIGUEL
913 LIBRARY ST
SAN FERNANDO CA 91340

359 011 34 00 4
SANTOS JOSEFINA L ET AL
663 AZARA PL # 1
SUNNYVALE CA 94086

358 152 16 00 3
SENG CHENDA
3671 GLENDON AV U105
LOS ANGELES CA 90034-6291

252 341 14 00 4
SHELTON STEPHANIE MELISSA
213 NW 47TH ST
SEATTLE WA 98107-4345

358 360 02 00 9
SILVA PAMELA A
4942 STUART DR
SANTA MARIA CA 93455

252 152 31 00 5
SILVERSTEIN MILTON M
7136 EAGLE RIDGE DR
GILROY CA 95020

358 152 08 00 0
SIMONIAN WILLIAM M & VICTORIA TRUST
9759 EL ARCO DR
WHITTIER CA 90603-1303

358 250 05 00 6
SMITH FAMILY TRUST
2100 LAS TUNAS RD
SANTA BARBARA CA 93103-1727

359 011 05 00 0 **DUP**
SOLAR STAR CALIFORNIA LLC
PO BOX 657
DES MOINES IA 50306-0657

359 011 07 00 6
SOLAR STAR CALIFORNIA LLC
PO BOX 657 (DMR8)
DES MOINES IA 50306-0657

358 141 33 00 2
SOUTHWEST CONSERVANCY III LLC
PO BOX 1413
BEND OR 97709-1413

358 141 20 00 4 **DUP**
SOUTHWEST CONSERVANCY LLC
PO BOX 1413
BEND OR 97709-1413

252 152 01 00 8
STIRES JOHN WESLEY & PATRICIA
4055 LARWIN AV
CYPRESS CA 90630-4124

358 201 09 00 0
STONE BRADLEY C & GREGOR
11620 WILSHIRE BL STE 520
LOS ANGELES CA 90025-1778

359 235 04 00 9
SUNG CHRISTINA HSIU LAN FAMILY TRUST
600 E PINE ST
ALHAMBRA CA 91801

358 152 37 00 4
SY PIN PIN
5625 SCHARF AV
FONTANA CA 92336

359 051 21 00 8
TEMER & MATTHEWS REV TRUST
6736 PASILLA ROAD NE
RIO RANCHO NM 87144-4950

358 152 26 00 2 **SITE**
THATHPHITHAKKUL SUTIN ET AL
1542 VIA SALARIA CT
HENDERSON NV 89052-4124

358 152 36 00 1
TIMPLE ANGEL JET & VERONICA
943 STONEGATE CT
CHULA VISTA CA 91913-2865

374 041 02 00 1
TOMAINO EVELYN TRUST
269 EDEN DR
FATE TX 75189

358 201 05 00 8
TONG NHIEM & LY HUONG P
P O BOX 2411
LA HABRA CA 90632

358 201 04 00 5
TOROSYAN ANUSHAVAN G
11 CARRIAGE DR
NEW MILFORD CT 06776-2630

358 192 02 00 4
UREVIG HOWARD SIDNEY TR
1421 CRAVENS AV APT 323
TORRANCE CA 90501

358 191 11 00 3
VAN DEN BERG MAGDALENA J
6512 E CAMINO VISTA # 4
ANAHEIM CA 92807

252 152 30 00 2
VAN DORN FAMILY TRUST
29876 GARDEN GROVE DR
MENIFEE CA 92584-7278

358 192 11 00 0
VASCO JOSEPH A & BARBARA J TR
P O BOX 3252
MESQUITE NV 89024

358 250 11 00 3
VELARDE MARILYN TR
480 BELLAGIO WY
WALNUT CA 91789

358 160 37 00 3
VILLALON ARMONDO & MARIA ELENA
2349 SANTA FE AV
TORRANCE CA 90501

358 360 14 00 4
WALSCHOTS BEN C & DARLENE TR
963 BLUEJAY DR
SANTA MARIA CA 93455-6324

358 152 31 00 6
WILLIAMS FMLY TR
4627 MARBELLA CT
SAN JOSE CA 95124

359 235 06 00 5
WILLIAMS ROBERT SCOTT
2233 CARDINAL DR
PLANO TX 75023-1629

359 031 57 00 7
WILLOW SPRINGS SOLAR 3 LLC
135 MAIN ST FLR 6
SAN FRANCISCO CA 94105-8113

358 360 06 00 1
WING ERNEST QUON
5 CALLE VERANO
RANCHO SANTA MA CA 92688-2622

374 041 03 00 4
WITTMANN JOHN A & ROSE TR EST
2413 PINE AV
MANHATTAN BEACH CA 90266

252 152 14 00 6
WONG LAI HING TR
7566 W 82ND ST
PLAYA DEL REY CA 90293

358 152 01 00 9
WOO MAYBELLE EST
165 DALEWOOD WY
SAN FRANCISCO CA 94127

315 213 02 00 3
WYLIE RONALD P
31 BRYAN CAVE RD
SOUTH DAYTONA FL 32119

358 250 16 00 8
YAMAMOTO ROSE
3918 VALLE DEL SOL
BONSALL CA 92003-4918

358 151 12 00 4
YANG SHUFAN & ZHANG WEINA
PO BOX 56867
SHERMAN OAKS CA 91413-1867

359 051 29 00 2
YERKEY MARILYN E TR
2420 N THREE SPRINGS DR
WESTLAKE VLLGE CA 91361

358 152 38 00 7
YUTIAO MARY L
5625 SCHARF AV
FONTANA CA 92336

359 011 35 00 7
AEK GLOBAL INVS LLC
4603 HURFORD TERRENCE
ENCINO CA 91436

358 390 09 **SITE**
HERNANDEZ RENAN & NORMA
38355 CAMPOS DR
PALMDALE CA 93551-4259

358 030 33 **SITE**
MINN FAMILY TRUST
526 PAINTBRUSH LN
SUPERIOR CO 80027

358 390 09 **SITE**
MINN FAMILY TRUST
526 PAINTBRUSH LN
LOUISVILLE CO 80027-8671

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 # 2019090215

Project Title: EIR 03-18; AVEP Solar Project by Chaparral Solar, LLC and Rabbitbrush Solar, LLC

Lead Agency: Kern County Planning and Natural Resources Department — Contact Person: Randall Cates

Mailing Address: 2700 "M" Street Suite 100 — Phone: 661-862-8612

City: Bakersfield — Zip: 93301-2323 — County: Kern

Project Location: County: Kern — City/Nearest Community: Rosamond

Cross Streets: The project site is located approximately 5.5 miles west of the unincorporated community of Rosamond; also being located within portions of Section 18 of Township 9 North, Range 13 West, San Bernardino Base and Meridian (SBBM), and within portions of Sections 9, 10, 12, 13, 14 15, and 23 of Township 9 North, Range 14 West, SBBM, County of Kern, State of California.

Lat. / Long.: 34° 51′ 49.6563″ N/ 118° 20′ 20.2236″ W — Total Acres: 1,406 acres

Assessor's Parcel No.: Multiple — Section: portion of Section 18 / portion of Sections 9, 10, 12, 13, 14, 15 and 23 — Twp.: 9N/9N — Range: 13W/14W — Base: MDB&M

Within 2 Miles: State Hwy #: N/A — Waterways: N/A

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 ☒ Other Specific Plan Amendment

☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan ☒ Other Nonsummary vacation of public access easements

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

☐ Annexation ☐ Redevelopment ☐ Coastal Permit

Development Type:

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

☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral: ____
☒ Power: Type Solar PV MW 250
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☒ Other: two communication towers, two energy storage systems

---

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, Greenhouse Gas Emissions, Tribal Cultural Resources, Wildfire

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Present Land Use/Zoning/General Plan Designation:

- Chaparral Solar Facility: inhabited residence, undeveloped land / *Zoning:* A FPS (Exclusive Agriculture - Floodplain Secondary Combining), A GH FPS (Exclusive Agriculture - Geologic Hazard - Floodplain Secondary Combining), E(2½) RS FPS (Estate (2 1/2 Acres) - Residential Suburban Combining - Floodplain Secondary Combining) / *Willow Springs Specific Plan:* 5.3/4.4 (Maximum 10 units/net acre/ Comprehensive Planning Area), 5.3/4.4/2.1 (Maximum 10 units/net acre/ Comprehensive Planning Area/ Seismic Hazard), 5.6 (Minimum 2.5 gross acres/unit), 6.2 (General Commercial).

- Rabbitbrush Solar Facility: uninhabited residence, undeveloped land / *Zoning*: A FPS, E(2½) RS FPS, E(5) RS FPS (Estate (5 Acres) - Residential Suburban Combining - Floodplain Secondary Combining), E(10) RS FPS (Estate (10 Acres) - Residential Suburban Combining - Floodplain Secondary Combining) / *Willow Springs Specific Plan:* 5.3/4.4, 5.6, 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 8.5 (Resources Management (Minimum 20-acre parcel size)).

Project Description: *(please use a separate page if necessary)*

a) Three (3) Specific Plan Amendments (SPA) to the Willow Springs Specific Plan to designations from 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to 5.3 (Maximum 10 Units per Net Acre) on 10 acres (SPA 1, Map 231-18), 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to 5.3 (Maximum 10 Units per Net Acre) on 591.96 acres and 5.3/4.4/2.1 (Maximum 10 Units per Net Acre/Comprehensive Planning Area/Seismic Hazard) to 5.3/2.1 (Maximum 10 Units per Net Acre/Seismic Hazard) on 72.15 acres (SPA 25, Map 232), and 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to 5.3 (Maximum 10 Units per Net Acre) on 40 acres (SPA 27, Map 232);

b) Three (3) Zoning Classification Changes (ZCC), from the existing Zone District of E (2 ½) RS FPS to A FPS on 10 acres (ZCC 3, Map 231-18), from the existing Zone District of E (2 ½) RS FPS to A FPS on 120 acres (ZCC 40, Map 232), and from the existing Zone District of E (2 ½) RS FPS, E (5) RS FPS and E (10) RS FPS to A FPS on 222 acres (ZCC 41, Map 232);

c) Three (3) Conditional Use Permits (CUP), to allow for the construction and operation of a 125 megawatt solar photovoltaic electrical generating facility within the A (Exclusive Agriculture) zone district on the Chaparral Site (CUP 1, Map 231-18, and CUP 33, Map 232), and to allow for the construction and operation of a 125 megawatt solar photovoltaic electrical generating facility within in an A (Exclusive Agriculture) District on the Rabbitbrush Site (CUP 35, Map 232), pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance;

d) Two (2) CUPs, each to allow for the construction and operation of a communication tower (Section 19.12.030.F) in an A District (CUP 34, Map 232; CUP 36, Map 232);

e) Two (2) requests for nonsummary vacation of public access easements on the project site, one corresponding to each of the two solar facilities; and

f) Three (3) Specific Plan Amendments to the Circulation Element of Willow Springs Specific Plan to remove Section and mid-section line road reservations as follows:
   1) The portion of the Section line between Section 18, T9N, R13W and Section 13, T9N, R14W lying north of Truman Road, the south half of the Section line between Section 18, T9N, R13W and Section 7, T9N, R13W, lying west of property owned by the City of Los Angeles Department Water and Power (Specific Plan Amendment 2, Map 231-18);
   2) The west quarter of the Section line between Section 13, T9N, R14W and Section 12, T9N, R14W, the east three quarters of the south half of the Section line between Section 13 T9N,R14W and Section 12 T9N/R14W; the east-west mid-section line of Section 13, T9N, R14W, the north-south mid-section line of Section 13, T9N, R14W; the east one-eighth of the south half of the east-west mid-section line of Section 14, T9N, R14W (Specific Plan Amendment 26, Map 232);
   3) The south half of the north-south mid-section line of Section 10, T9N, R14W; the north half of the north-south mid-section line of Section 15, T9N, R14W; the north half of the east-west mid-section line of Section 15, T9N, R14W; the west half of the east half of the west half of the south half of the east-west mid-section line of Section 14, T9N, R14W (Specific Plan Amendment 28, Map 232).

g) The project's permanent facilities would include service roads, two communication towers, communication cables, overhead and underground transmission lines, and operations and maintenance facilities.

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	____ State Lands Commission
____ Delta Protection Commission	____ SWRCB: Clean Water Grants

____	Education, Department of	____	SWRCB: Water Quality
S	Energy Commission	____	SWRCB: Water Rights
S	Fish & Game Region # Fresno	____	Tahoe Regional Planning Agency
____	Food & Agriculture, Department of	____	Toxic Substances Control, Department of
____	General Services, Department of	S	Water Resources, Department of
____	Health Services, Department of		
____	Housing & Community Development	S	Other So. San Joaquin Arch. Info. Ctr.
____	Integrated Waste Management Board	S	Other CalGEM - Bakersfield
S	Native American Heritage Commission	S	Other SWRCB: Division of Drinking Water

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

Starting Date January 11, 2021 Ending Date February 25, 2021

Lead Agency (Complete if applicable):

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

Signature of Lead Agency Representative: **/s/** **Date:** December 17, 2020

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

Draft
Environmental Impact Report

SCH# 2019090215

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By Chaparral Solar, LLC and Rabbitbrush Solar, LLC

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Technical Assistance by:

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626 Wilshire Boulevard, Suite 2200
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January 2021

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Chapter 1
Executive Summary

1.1 Introduction

The AVEP Solar Project (project), proposed by Chaparral Solar, LLC and Rabbitbrush Solar, LLC (project proponents/operators), would develop two photovoltaic (PV) solar facilities and associated infrastructure necessary to generate a combined total of approximately 250 megawatts (MW) of renewable electrical energy including an associated combined total of approximately 2,000 megawatt-hours (MWh) of energy storage systems on approximately 1,406 acres of privately owned land. The project consists of two sites: the 774-acre Chaparral Solar Facility and the 632-acre Rabbitbrush Solar Facility. Collectively, these sites are referred to as the project site. The proposed project would be built collectively at either the same time or alternatively as two approximately 125 MW facilities on the approximately 774-acre Chaparral site and 632-acre Rabbitbrush site, as commercial contracts are entered into for each. Depending upon market conditions, the Chaparral and Rabbitbrush facilities may also each include an energy storage system (ESS) with the capacity to store approximately 1,000 MWh of energy on each facility (for a combined project total of approximately 2,000 MWh). As proposed, each ESS would be located on five acres of land within the facility.

The project proponent/operator is requesting approval of the following applications by the County (acreages are approximate):

a) Chaparral Solar facility (by Chaparral Solar, LLC):
   - SPA 1, Map 231-18 (Specific Plan Amendment from 5.3/4.4 to 5.3). 10 acres.
   - SPA 25, Map 232 (Specific Plan Amendment from 5.3/4.4, to 5.3, and from 5.3/4.4/2.1 to 5.3/2.1). 672 acres.
   - SPA 26, Map 232 (eliminate future road reservations)
   - SPA 2, Map 231-18 (eliminate future road reservations)
   - ZCC 3, Map 231-18 (Zone Change from (E 2 1/2) RS FPS to A FPS). 10 acres.
   - ZCC 40, Map 232 (Zone Change from (E 2 1/2) RS FPS to A FPS). 120 acres.
   - CUP 1, Map 231-18 (solar facility). 10 acres.
   - CUP 33, Map 232 (solar facility). 764acres.
   - CUP 34, Map 232 (communication tower)
   - Nonsummary Vacation, Map 232 (Vacation of public access easement(s)). 32 acres.

b) Rabbitbrush Solar facility (by Rabbitbrush Solar, LLC):
   - SPA 27, Map 232 (Specific Plan Amendment from 5.3/4.4 to 5.3). 40 acres.
   - ZCC 41, Map 232 (Zone Change from E (2 ½) RS FPS, E (5) RS FPS and E (10) RS FPS to A FPS). 222 acres.
   - CUP 35, Map 232 (solar facility). 632 acres.
   - CUP 36, Map 232 (communication tower)

- SPA 28, Map 232 (eliminate future road reservations)
- Nonsummary Vacation, Map 232 (Vacation of public access easement(s)). 9 acres

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

Table 1-1, *Project Assessor Parcel Numbers (APNs) – Specific Plan Map Code Designations and Zone Districts – AVEP Solar Project*, identifies the Assessor Parcel Numbers (APN) for the project site.

TABLE 1-1: PROJECT ASSESSOR PARCEL NUMBERS (APNS) – SPECIFIC PLAN MAP CODE DESIGNATIONS AND ZONE DISTRICTS – AVEP SOLAR PROJECT

Solar Facility Site	APN	Willow Springs Specific Plan-Existing Map Code Designation(s)	Willow Springs Specific Plan-Proposed Map Code Designation(s)	Existing Zone District(s)	Proposed Zone Districts	Acres
Chaparral Site	358-030-07	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40
	358-030-08	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40
	358-030-09	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	41
	358-030-10	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40
	358-030-11	5.3/4.4	5.3	A FPS	A FPS	38
	358-030-12	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-14	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-15	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-16	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-17	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-19	5.3/4.4	5.3	A FPS	A FPS	40
	358-030-22	5.3/4.4	5.3	A FPS	A FPS	26
	358-030-23	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-24	5.3/4.4	5.3	A FPS	A FPS	41
	358-152-25	5.3/4.4	5.3	A FPS, E(2 ½) RS FPS	A FPS	40
	358-152-26	5.6	5.6	E(2½) RS FPS	A FPS	10
	358-152-27	5.6	5.6	E(2½) RS FPS	A FPS	10
	358-030-30	6.2	6.2	E(2½) RS FPS	A FPS	10
	358-030-33	6.2	6.2	E(2½) RS FPS	A FPS	32
	358-152-39	5.6	5.6	E(2½) RS FPS	A FPS	10
	358-152-40	5.6	5.6	E(2½) RS FPS	A FPS	10

Solar Facility Site	APN	Willow Springs Specific Plan-Existing Map Code Designation(s)	Willow Springs Specific Plan-Proposed Map Code Designation(s)	Existing Zone District(s)	Proposed Zone Districts	Acres
	358-390-09	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40
	358-390-16	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40
	252-341-48 (a portion thereof)	5.3/4.4	5.3	E(2½) RS FPS	A FPS	10
	359-011-36	5.6	5.6	E(2½) RS FPS	A FPS	10
			Total Chaparral Site Acreage			**774**
Rabbitbrush Site	358-010-04	5.7, 8.5	5.7/8.5	E(5) RS FPS, A FPS	A FPS	40
	358-010-13	8.5	8.5	A FPS	A FPS	80
	358-010-14	8.5	8.5	A FPS	A FPS	80
	358-010-17	8.5	8.5	A FPS	A FPS	20
	358-010-18	8.5	8.5	A FPS	A FPS	20
	358-010-19	8.5	8.5	A FPS	A FPS	40
	358-030-05	8.5	8.5	A FPS	A FPS	40
	358-030-06	8.5	8.5	A FPS	A FPS	40
	358-030-26	8.5	8.5	A FPS	A FPS	20
	358-030-27	8.5	8.5	A FPS	A FPS	20
	358-030-28	8.5	8.5	A FPS	A FPS	20
	358-030-29	8.5	8.5	A FPS	A FPS	20
	358-141-34	5.75	5.75	E(10) RS FPS	A FPS	5
	358-152-03	5.6	5.6	E(2½) RS FPS	A FPS	21
	358-152-54	5.6	5.6	E(2½) RS FPS	A FPS	3
	358-152-55	5.6	5.6	E(2½) RS FPS	A FPS	3
	358-152-56	5.6	5.6	E(2½) RS FPS	A FPS	3
	358-152-57	5.6	5.6	E(2½) RS FPS	A FPS	3
	358-152-58	5.6	5.6	E(2½) RS FPS	A FPS	11
	358-160-01	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-02	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-07	5.3/4.4	5.3	E(5) RS FPS	A FPS	20
	358-160-08	5.3/4.4	5.3	E(5) RS FPS	A FPS	20
	358-160-09	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-10	5.6	5.6	E(5) RS FPS	A FPS	10

Solar Facility Site	APN	Willow Springs Specific Plan-Existing Map Code Designation(s)	Willow Springs Specific Plan-Proposed Map Code Designation(s)	Existing Zone District(s)	Proposed Zone Districts	Acres
	358-160-13	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-14	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-21	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-24	5.6	5.6	E(5) RS FPS	A FPS	5
	358-160-25	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-26	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-27	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-29	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-30	5.6	5.6	E(5) RS FPS	A FPS	5
	358-160-31	5.6	5.6	E(5) RS FPS	A FPS	5
	358-360-04	5.75	5.75	E(10) RS FPS	A FPS	10
	358-360-05	5.75	5.75	E(10) RS FPS	A FPS	3
			Rabbitbrush Site Total Acreage			**632**
			Proposed Solar Project Total Acreage			**1,406**

LEGEND
2.1 = Seismic Hazard Overlay
4.4 = Comprehensive Planning Area
5.3 = Maximum 10 units/net acre
5.6 = Minimum 2.5 gross acres/unit
5.7 = Minimum 5 gross acres/unit
5.75 = Minimum 10 gross acres/unit
6.2 = General Commercial
8.5 = Resources Management (Minimum 20-acre parcel size)
2.1 = Seismic Hazard Overlay
4.4 = Comprehensive Planning Area
A = Exclusive Agriculture
E(2½) = Estate 2½ Acres
E (5) = Estate 5 Acres
E (10) = Estate 10 Acres
FPS = Floodplain Secondary Combining
GH = Geologic Hazard Combining
RS = Residential Suburban Combining

This Draft Environmental Impact Report (EIR) has been prepared by Kern County as the Lead Agency under CEQA. The Draft EIR provides information about the environmental setting and impacts of the project and alternatives. It informs the public about the project and its impacts and provides information to meet the needs of local, State, and federal permitting agencies that are required to consider the project. The EIR will be used by Kern County to determine whether to approve the requested CUPs (CUP 1, Map 231-18; CUP 33, Map 232; CUP 34, Map 232; CUP 35, Map 232; CUP 36, Map 232) and associated land use changes.

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

1.2 Project Summary

The project would develop a solar PV generating facility. As shown in Chapter 3, *Project Description*, **Figure 3-1**, *Site Vicinity*, and **Figure 3-2**, *Project Site Boundary*, of this EIR, the project is located in the southeastern portion of Kern County. The project would generate a combined total of 250 MW of renewable electrical energy with the capacity to store approximately 1,000 megawatt-hours (MWh) of energy on each facility (for a combined project total of approximately 2,000 MWh), for delivery to the Statewide grid. The project will share off-site substations and gen-tie lines associated with the previously permitted Willow Springs Solar and North Rosamond Solar Projects as shown on **Figure 3-11,** *Chaparral Solar Site – Willow Springs Substation Shared Facilities*, and **Figure 3-12,** *Rabbitbrush Solar Site – Rosamond Substation Shared Facilities*.

1.2.1 Discretionary Entitlements Required

To implement this project, depending upon site surveys and jurisdictional determinations, the following discretionary and ministerial permits/approvals may be required if applicable to the project, including but not limited to the following:

County of Kern

- Certification of Final Environmental Impact Report
- Adoption of 15091 Findings of Fact, and 15093, Statement of Overriding Considerations
- Approval of proposed Mitigation Monitoring and Reporting Program
- Approval of Willow Springs Specific Plan Amendments (SPA 1, Map 231-18; SPA 2, Map 231-18;
  SPA 25, Map 232; SPA 26, Map 232; SPA 27, Map 232; SPA 28, Map 232)
- Approval of Kern County Zone Changes (ZCC 3, Map 231-18; ZCC 40, Map 232; ZCC 41, Map 232)
- Approval of Kern County Conditional Use Permits (CUP 1, Map 231-18; CUP 33, Map 232; CUP 34, Map 232; CUP 35, Map 232; CUP 36, Map 232)
- Approval of Nonsummary Vacations (Chaparral Site, Rabbitbrush Site)
- Approval of applicable Franchise Agreement(s)
- Approval of Grading Permits
- Approval of Building Permits
- Approval of Kern County Encroachment Permits
- Fire Safety Plan

Other Responsible Agency Entitlements

Federal

- U.S. Fish and Wildlife Service (USFWS), Incidental Take Permit, if required
- United States Army Corps of Engineers Jurisdictional Determination/Section 404 Permit, if required

State

- California Public Utilities Commission
- California Department of Fish and Wildlife (CDFW)
  - Section 1600 et seq. (Lake and Streambed Alteration Agreement), if required
  - Section 2081 Permit (Incidental Take Permit), if required
- Lahontan Regional Water Quality Control Board (RWQCB)
  - Waste Discharge Requirements, if required
  - Regional Water Quality Certification CWA Section 401 Permit (if 404 Permit is required)
  - National Pollution Discharge Elimination System (NPDES) Construction General Permit if impacts to federal jurisdictional waters will occur
- California Department of Transportation (Caltrans)
  - Right-of-Way Encroachment Permit, if required
  - Oversized Loads Permit, if required

Local

- Eastern Kern Air Pollution Control District (EKAPCD)
  - Authority to Construct
  - Fugitive Dust Control Plan
  - Permit to Operate
  - Any other permits as required

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

1.3 Relationship of the Project to Other Solar 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 solar project and, if approved, would not depend on any other solar project for economic viability.

1.4 Purpose and Use of the EIR

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

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

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

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

1.5 Project Overview

1.5.1 Regional Setting

The project site is located in unincorporated southeastern Kern County, in central California as shown in Chapter 3, *Project Description*, **Figure 3-1** and **Figure 3-2**, of this EIR. The topography of the project site is relatively flat; however, the foothills at the base of the Tehachapi Mountain Range are approximately 4.5 miles north of the project site. Elevations across the project site range from approximately 12,700 feet above mean sea level (msl) in the northwest portion of the site to approximately 2,457 feet above msl in the southeast portion of the site; thus, the site's topography has a gentle slope to the southeast.

The proposed project is in the eastern high desert region of unincorporated Kern County. More specifically, the project is in the western extent of the Mojave Desert near Mojave, California. It is generally bordered

by Avenue of the Stars to the north, 100th Street West and a transmission line easement utilized by the Los Angeles Department of Water and Power to the east, Rosamond Boulevard to the south, and 130th Street West to the west. The site is located within portions of Section 18 of Township 9 North, Range 13 West, San Bernardino Base and Meridian (SBBM), and within portions of Sections 9, 10, 12, 13, 14 15, and 23 of Township 9 North, Range 14 West, SBBM.

1.5.2 Surrounding Land Uses and Project Site Conditions

Land uses in the region include a mix of undeveloped land, agriculture, residential, recreational and public facilities, and renewable energy projects (solar and wind). Desert vegetation dominates the proposed project site and region. Topography across the proposed project sites is relatively flat. The major north-south route in the region is State Route 14, a four-lane highway located approximately 8 miles east of the proposed project. The major east-west route near the proposed project is State Route 58, a four-lane highway located approximately 13.5 miles north of the proposed project. Other roads serving the project include Rosamond Boulevard, 110th Street West, 120th Street West, and 130th Street West. Paved and unpaved roadways generally following section lines are found throughout the area. The nearest populated areas to the project site are privately owned land located in the western extent of the Mojave Desert, approximately 5.5 miles west of the unincorporated community of Rosamond, California.

The Mojave Creosote Bush Scrub community dominate most of the proposed project sites. This community typically occurs on well-drained soils in alluvial fans, bajadas, and upland slopes. Growth occurs during spring (or rarely in summer or fall) if rainfall is sufficient. This is one of the most widely distributed desert plant communities in the Mojave Desert, occurring from the desert floor up to approximately 3,500 feet in elevation and extending into northwestern Arizona and southern Utah. Scattered, widely spaced Joshua trees occur throughout portions of the creosote bush scrub communities present within the project site; however, they do not occur at a density high enough to consider them a distinct woodland community.

The foothills of the Tehachapi Range occur approximately 4.5 miles north of the proposed project, and the Central Transverse Range occurs approximately 15 miles south of the site. The proposed project and surrounding land are mostly flat and exhibit little topographic variation.

Table 1-2, *Project Site and Surrounding Land Uses*, presents the existing land uses, designations, and zoning classification for the project site and surrounding area.

TABLE 1-2: PROJECT SITES AND SURROUNDING LAND USES

	Existing Land Use	Existing Map Code Designation	Existing Zoning Classification
Chaparral Facility Site	**Undeveloped, residential dwelling**	**3.3, 5.3/4.4, 5.3/4.4/2.1, 5.6, 6.2**	**A FPS, A GH FPS, E(2 ½) RS FPS**
North	Undeveloped	3.3, 5.3/4.4, 5.3/4.4/2.1, 5.6/2.1	A FPS, E (2½) RS FPS, A GH FPS
South	Solar facility, undeveloped	3.3, 5.3, 5.6	A FPS, E (2 ½) RS FPS
East	Undeveloped, sparse residential dwellings	3.3, 5.3/4.4, 5.6	A FPS, A GH FPS, E (2 ½) RS FPS, E (2½) RS MH FPS
West	Undeveloped	3.3, 5.3/4.4, 5.3/4.4/2.1, 5.6, 8.5, 8.5/2.1	A FPS, A GH FPS, E (2 ½) RS FPS
Rabbitbrush Facility Site	**Undeveloped, residential dwellings**	**5.3/4.4, 5.6, 5.7, 5.75, 8.5**	**A FPS, E (2 ½) RS FPS, E (5) RS FPS, E (10) RS FPS**
North	Undeveloped	5.6, 5.7, 5.75, 8.5	A FPS, E(5) RS FPS, E (10) RS FPS
South	Solar facility	5.3, 5.3/4.4, 5.75	A FPS, E(1) RS MH FPS, E(10) RS FPS
East	Undeveloped, sparse residential dwellings	5.3/4.4, 5.6, 5.7	E (2 ½) RS FPS, E (5) RS FPS, A FPS
West	Undeveloped, sparse residential dwellings, solar facility	5.3, 5.6, 5.75	A FPS, E (2½) RS FPS, E (10) RS FPS

LEGEND

2.1 Seismic Hazard Overlay
3.3 = Other Facilities
4.4 = Comprehensive Planning Area
5.3 = Maximum 10 units/net acre
5.6 = Minimum 2.5 gross acres/unit
5.7 = Minimum 5 gross acres/unit
5.75 = Minimum 10 gross acres/unit
6.2 = General Commercial
8.5 = Resources Management (Minimum 20-acre parcel size)
A = Exclusive Agriculture
E(2½) = Estate 2½ Acres
E(5) = Estate 5 Acres
E(10) = Estate 10 Acres
FPS = Floodplain Secondary Combining
GH = Geologic Hazard Combining
RS = Residential Suburban Combining

SOURCE: Kern County, 2020

1.5.3 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 350 (2015), which requires that 50 percent of all electricity sold in the State to be

generated from renewable energy sources by the year 2020. As further required by the State CEQA *Guidelines*, the specific objectives of the project are provided below:

- Develop a Solar PV power generating project in order to assist the State of California in achieving the Renewable Portfolio Standard obligations and Senate Bill 350 and California Global Warming Solutions Act (AB 32) greenhouse gas reduction goals by providing a significant new source of renewable energy;
- Produce and transmit electricity at a competitive cost;
- Locate generating facilities in a rural portion of southeastern Kern County which receives intense solar radiation and is in proximity to an available interconnection to the existing or permitted electrical transmission system;
- Minimize environmental impacts by:
  - Using existing electrical transmission facilities, rights-of-way, roads, and other existing infrastructure where practicable;
  - Minimizing water use; and
  - Reducing greenhouse gas emissions
- Use technology that is available, proven, efficient, easily maintained and environmentally sound;
- Assist the County in continuing the goal in the Energy Element of its General Plan to develop large scale solar energy development as a major energy source in the County;
- Contribute to County goal of increasing renewable energy storage; and
- Develop a commercially financeable renewable energy project.

1.5.4 Project Characteristics

The project includes the development of two PV solar facilities and associated infrastructure necessary to generate a total of approximately 250-MW (approximately 125 MW per each facility) of renewable electrical energy on 1,406 acres of privately owned land in the eastern high desert region of unincorporated Kern County. Depending upon market conditions, the Chaparral and Rabbitbrush facilities may also each include an energy storage system (ESS) with the capacity to store approximately 1,000 megawatt-hours (MWh) of energy on each facility (for a combined project total of approximately 2,000 MWh). The project site is shown in Chapter 3, *Project Description*, **Figure 3-2**, of this EIR. Conceptual site plans for the project site are shown in Chapter 3, **Figure 3-10**, *Project Site Plan*, of this EIR. The combined project facilities would include the following components:

- Installation of a total of approximately 250 MW of solar PV modules, mounted either on fixed-tilt systems, horizontal tracker systems, or a combination thereof. The mounting system for the modules will be supported by steel posts driven into the ground;
- Diesel or battery powered backup generators as required by applicable County or local codes for emergency onsite backup power during project operations for stowing the trackers, or to maintain critical electronic equipment that is used for operation of the plant;
- Underground and above ground medium voltage collections systems, both on-site and off-site;
- Inverters and medium voltage transformers (also referred to as medium voltage step-up transformers);

- Installation of one or more additional transformers and associated equipment at two existing offsite solar project substations, i.e., the North Rosamond Solar Project Substation for use in conjunction with the Rabbitbrush facility, and Willow Springs Solar Project Substation for use in conjunction with the Chaparral facility;
- SCE improvements made at the SCE Whirlwind substation for the solar facilities to interconnect;
- On-site access roads;
- Perimeter security fencing which would be six feet high and topped with three strands of barbed wire, for a total height of seven feet;
- Concrete pads sized and installed to accommodate the associated equipment (inverters, switchgear, transformers, etc.);
- Meteorological data collection systems;
- Up to two unmanned Operations and Maintenance (O&M) Building(s);
- Up to two 5-acre energy storage systems and associated appurtenances;
- Telecommunication equipment including underground and overhead telephone, fiber optics and wireless communications infrastructure such as cell, satellite, or microwave towers (for which CUP applications have been submitted (CUP 34, Map 232 and CUP 36, Map 232). As previously indicated, there would be a maximum of two such communications towers (one on each of two solar facilities). This equipment will be both on-site and off-site. Regarding off-site telecommunication infrastructure, the project proponent expects to share existing wired or wireless telecommunications facilities with the North Rosamond Solar Project and the Willow Springs Solar Project from a local service provider; in the event that these facilities are not sufficiently available in the site vicinity, the project proponent may install hard-wired (land-line) systems, underground or on overhead lines;
- Proposed and/or existing water well(s) on each individual facility site and/or well(s) shared by one or more of the two facilities;
- Pipeline(s), should water to the project site be supplied from a water well located on the Willow Springs Solar Project. Such pipeline(s) may be used during the construction, operational and decommissioning phases of the proposed project; and
- The following potential stormwater and water storage-related components (the location and number of which will be determined during detailed design engineering in accordance with applicable building codes):
  - Retention pond(s). Such retention pond(s) would be unlined. The only water entering retention pond(s) would be stormwater. Other than evaporation, water will only exit the retention pond(s) by seeping into the ground. Retention pond(s) may contain stormwater throughout the year.
  - Detention pond(s). The only difference between detention pond(s) and retention pond(s) is the amount of time which stormwater would remain contained (i.e., retention pond(s) may contain stormwater throughout the year, while detention pond(s) would only hold water for a short period of time before it seeps into the ground).
  - Drainage channel(s). These channel(s) will convey stormwater to the aforementioned on-site water feature(s) (i.e., retention pond(s) and/or detention pond(s)).

Temporary lined basin(s). These basin(s) would only be present during the construction phase of the proposed project. These basin(s) will be backfilled at the conclusion of the construction phase of the proposed project. Water in these basin(s) will come from well(s) and will be conveyed via pipeline(s). Other

than evaporation, water exiting these basin(s) will (after potentially being piped to tank(s) on the project site) be loaded onto trucks and delivered as necessary on the project site (i.e., for site preparation, dust control).

Solar PV Panels

Solar energy would be captured by PV panels. Based on current technology, it is estimated that the proposed project would include approximately 625,000 modules.

- The Chaparral Facility would have an estimated 312,500 modules;
- Rabbitbrush Facility would have an estimated 312,500 modules;

However, the number of modules installed will account for future technological improvements.

Solar Trackers

The PV module rows would be oriented north-to-south if single-axis trackers are used. The maximum height of the single-axis tracker solar panels would be 13 feet above grade (typically the panels would be at the maximum height of 13 feet above grade at the beginning and end of each day, however it could be lower depending on the angle of the sun and post height as determined during final engineering design). A solar tracking mechanism is used to maximize the solar energy conversion efficiency by keeping the modules perpendicular to the sun's energy rays throughout the day. This completed assembly of PV modules mounted on a framework structure is called a "tracker" because it tracks the sun from east to west. If used, single-axis trackers would increase the efficiency of energy production from the arrays relative to a fixed tilt system. The exact tracker manufacturer and model would be determined in the final design. All trackers are intended to function identically in terms of following the motion of the sun.

Module layout and spacing is optimized to balance energy production versus peak capacity and would depend on the sun angles and shading caused by the horizon surrounding the project. The spacing between the rows of trackers is dependent on site-specific features and would be identified in the final design. The final configuration would allow for sufficient clearance for maintenance vehicles and panel access.

Fixed Tilt Racking System

If the fixed tilt racking system is used, the solar panels would be in a fixed tilt position that allows for the most sunlight specific to the geography of the project. The PV modules would have a maximum height of 13 feet above grade.

Electrical Collector System and Inverters

Each facility will have a collection system connecting PV modules to the substation which includes a combination of underground, aboveground cable trays and overhead (poles or H-Frame structures) DC and AC electrical and communication cables. DC electrical collection lines would connect the PV modules to the inverter. Inverters will convert the DC power into low voltage AC power within the power conversion station (PCS) unit. Transformers within the PCS unit will then increase the AC power from low voltage to medium voltage (MV). MV AC electrical lines will connect onsite MV transformers to the offsite high voltage (HV) transformer(s) in the substations which will be utilized in conjunction with the proposed

project (i.e., North Rosamond Solar Project Substation and Willow Springs Solar Project Substation). PV combining switchgear (PVCS), Sectionalizing Cabinets (SC) or other electrical combiner boxes may be installed to combine electrical lines on the collection system. The overhead collection system may contain single or multiple three phase electrical circuits and communication lines on the same structures. Overhead collection systems typically consist of wood or steel poles on monopoles or H-Frame structures. The collection system structures are proposed to have a maximum height of 75 feet, but may vary based on voltage, minimum height to avoid shading over modules, ground elevation, crossing of existing or proposed facilities, National Electric Safety code and right-of-way requirements.

Energy Storage System

As proposed, the proposed project would have up to two Energy Storage Systems (ESS) (one on each facility site) encompassing 5 acres per facility. The Chaparral Solar ESS has two potential location options, which are dependent on final design. Refer to **Figure 3-13**, *Collection Line and Gen-Tie Map*, for the potential location options on the Chaparral Solar Facility site, and refer to **Figure 3-15**, *Rabbitbrush Facility Layout*, for a detailed view of the southern potential location option on the Chaparral site. The southern potential ESS location on the Chaparral site is located on a 10-acre parcel; while the potential ESS on that parcel (if constructed) would be 5 acres, nonetheless the entirety of the 10-acre parcel is accounted for in the acreage of the Chaparral site. The proposed two location options for the Rabbitbrush Solar ESS are shown on **Figure 3-15**, however, the ultimate location will be dependent on final design. Each ESS would consist of self-contained battery storage modules placed in racks, converters, switchboards, inverters, medium voltage transformers, controls, and integrated heating, ventilation, and air conditioning (HVAC) units, all enclosed in one or more buildings or in prefabricated metal containers.

If the ESS uses prefabricated metal containers, each container will be a 40ft long by 8ft wide battery container, with side-doors accessibility to the battery racks that are installed inside. Adjacent to one or two DC battery containers will be one PCS (power conversion station) container (each PCS container will be 20ft long by 8ft wide) that will hold the inverter and associated medium voltage transformer. For each facility, approximately 130 DC battery containers and approximately 65 PCS containers will be installed. Alternatively, depending on final design selection, multiple smaller energy storage units may be distributed through the PV arrays and situated adjacent to each PV inverter. Such smaller energy storage units on the Chaparral Site would be charged by the Chaparral Site, and/or charged by energy from the electrical grid. Such smaller energy storage units on the Rabbitbrush Site would be charged by the Rabbitbrush Site, and/or charged by energy from the electrical grid.

The battery storage modules would use proven storage technologies such as Lithium Ion, Sodium Sulphur, Vanadium-Redox-Flow, Zinc-based, or Iron-based batteries. More containers may be required due to the lower energy density of some of the technologies.

All prefabricated metal containers and building(s) installed/constructed on the project sites would have appropriate fire suppression systems built to applicable state and local code requirements. The final design would include appropriate containment features to prevent the escape of liquids or spills from the ESS site.

Generation-Tie Line and Interconnection to the Statewide Grid

The project will interconnect to the SCE Whirlwind Substation, as shown on **Figure 3-10,** *Project Site Plan*. The project will share off-site substations and gen-tie lines associated with the previously permitted

Willow Springs Solar and North Rosamond Solar Projects as shown on **Figure 3-11,** *Chaparral Solar Site – Willow Springs Substation Shared Facilities*, and **Figure 3-12,** *Rabbitbrush Solar Site – Rosamond Substation Shared Facilities*. Project interconnection will require SCE to install new interconnection-related components at the Whirlwind Substation such as additional control equipment. As proposed, the aforementioned components would occupy a maximum area of 100 square feet and will be attached to existing racks (i.e., not ground-mounted). Approval of the SCE Interconnection Facilities is within the sole discretionary permitting jurisdiction of the CPUC. However, because CEQA requires analysis of the environmental impacts of the full project, the project description includes the SCE Interconnection Facilities related to the proposed project for this purpose.

Fencing

Security fencing would be installed around each facility perimeter (non-contiguous portions will be fenced separately), and additional fencing will be installed around each substation, ESS, and other areas requiring controlled access, in order to restrict public access during construction and operations. Security fencing would be six feet tall and topped with three strands of barbed wire for a total height of seven feet. The fence posts may be set in concrete. Additional security may be provided through the use of closed-circuit video surveillance cameras and intrusion systems, electronic security systems or other available technology. On-site personnel may be part of 24-hour site security. The fencing would remain for the life of the project.

Site Access

The proposed project will have private driveway access off of County roads, private perimeter access roads, and interior access ways for construction and operation. Perimeter access roads and interior access ways will be composed of native compacted earth. All driveway approaches to/from the public right of way will be constructed in accordance with Kern County Development Standards. The project would be primarily accessed from State Route 14 via Rosamond Boulevard or from State Route 138 via 170 St West. Road improvements may be required as part of the project.

Chaparral Solar may have driveways from Rosamond Boulevard, 100th St West and 110th St West. Rabbitbrush Solar may have driveways from 130th Street West, 120th St West and Rosamond Boulevard. Preliminary driveway locations are shown on each facility layout, but may change during final design based on engineering considerations.

1.6 Environmental Impacts

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

analysis of all environmental issues identified in *CEQA Guidelines* Appendix G except population and housing and recreation.

1.6.1 Impacts Not Further Considered in this EIR

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

- Population and Housing
- Recreation

1.6.2 Impacts of the Project

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

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

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

1.6.3 Less-than-Significant Impacts

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

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

Impact	Mitigation Measures
Agriculture and Forestry Resources (Project and Cumulative)	MM 4.11-1
Air Quality (Project)	MM 4.3-1 through MM 4.3-5
Biological Resources (Project)	MM 4.4-1 through MM 4.4-12, MM 4.1-5 through MM 4.1-7, MM 4.9-2, and MM 4.10-2
Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-5
Energy (Project and Cumulative)	MM 4.3-1
Geology and Soils (Project and Cumulative)	MM 4.7-1 through MM 4.7-4 and MM 4.10-2
Greenhouse Gas Emissions (Project and Cumulative)	No mitigation required
Hazards and Hazardous Materials (Project and Cumulative)	MM 4.9-1 and MM 4.9-2, MM 4.14-1 and MM 4.17-1
Hydrology and Water Quality (Project and Cumulative)	MM 4.9-1, MM 4.10-1 and MM 4.10-2
Land Use and Planning (Project and Cumulative)	MM 4.11-1 and MM 4.11-2
Mineral Resources (Project and Cumulative)	No mitigation required
Noise (Project and Cumulative)	MM 4.13-1 through MM 4.13-3
Public Services (Project and Cumulative)	MM 4.14-1 through MM 4.14-5
Transportation and Traffic (Project and Cumulative)	MM 4.15-1 and MM 4.15-2
Tribal Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-5
Utilities and Service Systems (Project and Cumulative)	MM 4.10-1 and MM 4.17-1
Wildfire (Project)	MM 4.10-1 and MM 4.14-1

1.6.4 Significant and Unavoidable Impacts

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

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

- Aesthetics (Project and Cumulative)

- Air Quality (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, 4.4, and 4.18 of this EIR present detailed analyses of these impacts and describe the means by which the mitigation measures listed in **Table 1-4**, *Summary of Significant and Unavoidable Project-Level and Cumulative Impacts of the Solar Facility*, 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	Mitigation Measures
Aesthetics	Implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. Mitigation Measures MM 4.1-1 through MM 4.1-4 would be incorporated to reduce visual impacts that would occur from the collection of debris along the site boundary and would limit vegetation removal and would plant native vegetation. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped landscape character of the project site, impacts to visual resources would remain **significant and unavoidable**.	The project would have cumulatively significant and unavoidable aesthetic impacts related to visual character after implementation of mitigation. Although implementation of mitigation measures would reduce the adverse visual changes experienced at individual viewpoints, there are no mitigation measures that would allow for the preservation of the existing visual character of the area. The conversion of approximately 1,406 acres of privately owned land to a solar energy production facility is considered a **significant and unavoidable** cumulative impact.	MM 4.1-1 through MM 4.1-7
Air Quality	There would be no significant and unavoidable project impacts.	There are several alternative energy (wind and solar) projects being developed within the eastern Kern geographical area. From a site-specific, project-level operational review, these projects are required to comply with all rules and regulations of the Eastern Kern Air Pollution Control District. Impacts associated with operation of the proposed project are generally considered less than significant. However, given the total number of development proposals within the region, even with the implementation of Mitigation Measures MM 4.3-1 through MM 4.3-3, cumulative temporary construction impacts are considered **significant and unavoidable**.	Mitigation Measures MM 4.3-1 through MM 4.3-3

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

Resources	Project Impacts	Cumulative Impacts	Mitigation Measures
Biological Resources	There would be no significant and unavoidable project impacts.	As development increases within Kern County, impacts to biological resources within the region are increasing on a cumulative level. When considered with the number of present and reasonably foreseeable future development projects in the Antelope Valley, the project would result in a significant and unavoidable cumulative loss of foraging and nesting habitat for transient wildlife species, including burrowing owls, Swainson's hawk, loggerhead shrike, LeConte's thrasher, northern harrier, mountain plover, other raptors, migratory birds, American badger, and desert kit fox, even with the implementation of project-specific mitigation measures. The loss of foraging and nesting habitat for transient wildlife species that may utilize habitat on the project site would result in a **significant and unavoidable** cumulative impact.	Mitigation Measures MM 4.1-5 through MM 4.1-7, MM 4.4-1 through MM 4.4-12, MM 4.9-2, and MM 4.10-2
Wildfire	There would be no significant and unavoidable project impacts.	Given the location in a rural area and limited infrastructure, the project would have cumulatively **significant and unavoidable** wildfire impacts related to: the impairment of an adopted emergency response plan; the exposure of project occupants to pollutant concentrations from a wildfire; the installation or maintenance of associated infrastructure; and the exposure of people or structure to significant risks as a result of runoff, post-fire slope instability, or drainage changes, even after implementation of mitigation measures.	Mitigation Measures MM 4.10-1 and MM 4.14-1

1.6.5 Growth Inducement

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

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

Growth inducement can be a result of new development that requires an increase in employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the project would not induce substantial growth. During project operation, one to two employees would be onsite intermittently every month (less than four trips a week) to perform maintenance duties. It is anticipated that the construction workforce would commute to the site each day from local communities, and the majority would likely come from the existing labor pool as construction workers travel from site to site as needed. Construction staff not drawn from the local labor pool would stay in any of the local hotels in local communities.

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

In *Kerncrest Audubon Society v. Los Angeles Department of Water and Power*, the analysis of growth-inducing effects contained in the EIR for the Pine Tree Wind Development Project was challenged. Plaintiffs argued that the discussion was too cursory to provide adequate information about how additional electricity generated by the project would sustain further growth in the Los Angeles area. The court held that the additional electricity that the project would produce was intended to meet the current forecast of growth in the Los Angeles area. As such, the wind development project would not cause growth, and so it was not reasonable to require a detailed analysis of growth-inducing impacts. In addition, EIRs for similar energy projects have contained similarly detailed analyses of growth-inducing impacts. Their conclusions that increasing the energy supply would not create growth has been upheld, because: (1) the additional energy would be used to ease the burdens of meeting existing energy demands within and beyond the area of the project; (2) the energy would be used to support already-projected growth; or (3) the factors affecting growth are so multifarious that any potential connection between additional energy production and growth would necessarily be too speculative and tenuous to merit extensive analysis. Thus, as has been upheld in the courts, this level of analysis provided in this EIR is adequate to inform the public and decision makers of the growth-inducing impacts of the project.

1.6.6 Irreversible Impacts

CEQA Guidelines Section 15126.2(c) defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continued phases of the project. Irreversible impacts can also result from

damage caused by environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to ensure that such consumption is justified.

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

1.7 Alternatives to the Project

CEQA Guidelines Section 15126.6 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 project, the aforementioned objectives established for the project and the feasibility of the alternatives considered, a range of alternatives is analyzed below and discussed in detail in Chapter 6, *Alternatives*, of this EIR.

1.7.1 Alternatives Considered and Rejected

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

Wind Energy Project Alternative

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

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

In addition, energy production from wind power would not require the significant water usage associated with coal, nuclear, and combined-cycle sources. Turbines used in wind farms for commercial production

of electric power are usually three-bladed units that are pointed into the wind by computer-controlled motors. The wind farm would consist of a group of wind turbines placed where electrical power is produced. The individual turbines would be interconnected with a medium-voltage power collection system and a communications network. At a substation, the medium-voltage electrical current would be increased through a transformer before connection to the high-voltage transmission system. Compared with traditional energy sources, the environmental effects of wind power are relatively minor. However, wind farms would not decrease short-term construction-related air emissions. Wind turbines would also have the potential to affect avian species in the local area. In addition, in order for wind turbines to produce an equivalent 250 MW of power that the project would produce, the alternative would require more space than what the project site current accommodates. Consequently, the project site would need to be expanded.

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

- It would substantially increase the significant aesthetic impacts associated with the project because wind turbines would be much taller than solar panels and are more visible from many viewpoints.
- It may result in additional/greater biological resources impacts to avian species than the project.
- It may generate long-term noise impacts to nearby sensitive receptors from rotating turbine blades.
- It may result in increased land use and planning impacts associated with the project due to the need for an increased project site.

Industrial Power Plant Alternative

This alternative would involve the development of a natural gas-fired power plant or plants (equivalent to 250 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 including aesthetics, air quality, GHG emissions, land use and planning, noise, transportation, and public utilities, including water use and disposal.
- Depending on siting, it may also result in greater biological resources impacts than the project.
- It 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 250 MW PV solar facility and 2,000 MWh ESS on a site totaling 1,406 acres. *CEQA Guidelines* Section 15126.6(f)(2(a) states that the key and initial step in considering an alternative site is whether "any of the significant effects of the project would be avoided or substantially lessened" in relocating the project, while remaining consistent with the same basic objectives of the 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. As noted above, 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 because it would not avoid or substantially reduce the significant environmental effects of the proposed project.

1.7.2 Alternatives Selected for Analysis

The following alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project, but which may avoid or substantially lessen any of the significant impacts of the project. The following alternatives are analyzed in detail in this chapter of the EIR:

- Alternative 1: No Project Alternative

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

Table 1-5, *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 1,406 acres would generate up to 250 MW of electricity with the capacity to store up to 1,000 MWh or energy. Approval of six Conditional Use Permits (CUPs) (four for construction and operation of commercial solar electrical generating facilities, two for communications towers), Amendments to the Willow Springs Specific Plan (SPAs) land use map and circulation element, Zone Changes (ZCCs), and nonsummary vacation of public access easements 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 • Avoids need for CUPs, SPAs, ZCCs, and requests to vacate public access easements • Avoids all significant and unavoidable impacts • Greater impacts to greenhouse gas (GHG) emissions • Less impact in all remaining environmental issue areas • Does not meet any of the project objectives
Alternative 2: Specific Plan and Zoning Build-Out Alternative	Project site would be developed to the maximum intensity allowed under the Kern County General Plan land use designations and zoning classifications and other existing applicable restrictions. The portions of the project site zoned as A would be developed with agricultural uses (approximately 1,052 acres), and the portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres).	• Avoids need for CUPs and SPAs, ZCCs, and requests to vacate public access easements • Similar impacts to biological resources, hazards and hazardous materials • Less impact to aesthetics, agricultural and forestry resources, and land use and planning • Greater overall impacts in all remaining environmental issue areas • Does not meet any of the project objectives

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative 3: Reduced Acreage Alternative	Construction and operation of one solar facility on approximately 632 acres. This alternative would construct a solar array field capable of generating approximately 125 MW of electricity and storing 1,000 MWh of electricity, thereby reducing the project's renewable energy output by 50 percent. The project site would require approval of two CUPs, two SPAs, two ZCCs and one request to vacate public access easements.	• Similar impacts to greenhouse gas emissions, hazards and hazardous materials, land use and planning, noise, public services, transportation, and utilities and service systems • Decreased GHG offset benefits to meet project objectives • Less impact in all remaining environmental issue areas • Does not meet all the project objectives
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 250 MW of PV solar distributed on rooftops throughout the Antelope Valley. Electricity generated would be for onsite use only.	• Avoids need for solar facility CUPs, telecommunication tower CUPs, SPAs, ZCCs and requests to vacate public access easements at the project site but may require other entitlements (such as a CUP or variance) on other sites • Avoid significant and unavoidable impacts associated with aesthetics, air quality, and biological resources • Greater impacts to GHG emissions land use and planning, and noise • Similar impacts energy • Less impact in all remaining issue areas • Does not meet all the project objectives areas nor does this alternative account for energy storage system (ESS) component of the project

TABLE 1-6: COMPARISON OF ALTERNATIVES

Environmental Resource	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Specific Plan and Zoning Build-Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and Unavoidable (project and cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agricultural and Forestry Resources	Less than Significant	Less (NI)	Less (NI)	Less (LTS)	Less (NI)
Air Quality	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative construction)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Biological Resources	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative)	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)	Less (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)	Greater (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 (LTS)	Less (NI)
Noise	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Similar (LTS)
Public Services	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Transportation and Traffic	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)

TABLE 1-6: COMPARISON OF ALTERNATIVES

Environmental Resource	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: 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
Tribal Cultural Resources	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (NI)
Utilities and Service Systems	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Wildfires	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative)	Less (SU)	Greater (SU)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	Some	None	All

NI = No Impact
LTS = Less than Significant
SU = Significant and Unavoidable

1.7.3 Alternative 1: No Project Alternative

The *CEQA Guidelines* require EIRs to include a No Project Alternative for the purpose of allowing decision makers to compare the effects of approving the proposed project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the 250 MW PV solar facility and associated facilities on the 1,406-acre site would not occur. No collection lines would be constructed. The No Project Alternative would not require a Conditional Use Permit (CUP) for construction and operation of a 250 MW solar project and associated facilities. Amendments to the Willow Springs Specific Plan land use map and circulation element along with public easement vacations would not be required. The No Project Alternative would maintain the current zoning, land use classifications, and existing land uses, which consist mostly of undeveloped desert vegetation. No physical changes would be made to the project site.

1.7.4 Alternative 2: Specific 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 Willow Springs Specific Plan land use and zoning classifications, with the proposed Project not permitted or constructed. The project site is currently designated as Map Code(s) 5.3/4.4 (Maximum 10 units/net acre/Comprehensive Planning Area), 5.3/4.4/2.1 (Maximum 10 units/net acre/Comprehensive Planning Area/Seismic Hazard), 5.6 (Minimum 2.5 gross acres/unit), 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 6.2 (General Commercial), and 8.5 (Resources Management [Minimum 20-acre parcel size]).

The project site has various zone classifications which consist of; A FPS (Exclusive Agriculture - Floodplain Secondary Combining), A GH FPS (Exclusive Agriculture – Geologic Hazard Combining – Floodplain Secondary Combining), E(2½) RS FPS (Estate (2½ acres) – Residential Suburban Combining – Floodplain Secondary Combining), E(5) RS FPS (Estate (5 acres) – Residential Suburban Combining – Floodplain Secondary Combining), and E(10) RS FPS (Estate 10 acres – Residential Suburban Combining - Floodplain Secondary Combining).

Implementation of Alternative 2 would consist of developing the project site under the current land use classification of 5.3/4.4 (Maximum 10 units/net acre/Comprehensive Planning Area), 5.3/4.4/2.1 (Maximum 10 units/net acre/Comprehensive Planning Area/Seismic Hazard), 5.6 (Minimum 2.5 gross acres/unit), 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 6.2 (General Commercial), and 8.5 (Resources Management [Minimum 20-acre parcel size]).

Given that the zoning classifications for the project site consist of A FPS (Exclusive Agriculture - Floodplain Secondary Combining), A GH FPS (Exclusive Agriculture – Geologic Hazard Combining – Floodplain Secondary Combining), E(2½) RS FPS (Estate (2½ acres) – Residential Suburban Combining – Floodplain Secondary Combining), E(5) RS FPS (Estate (5 acres) – Residential Suburban Combining – Floodplain Secondary Combining), and E(10) RS FPS (Estate 10 acres – Residential Suburban Combining - Floodplain Secondary Combining), the project site would be developed in-accordance with those designations. The portions of the project site zoned as A encompass approximately 1,052 acres, and the

portions of the project site zoned as E encompass approximately 354 acres. No solar facilities would be developed under this alternative.

1.7.5 Alternative 3: Reduced Acreage Alternative

Under Alternative 3, the Reduced Acreage Alternative, the project site would be reduced to only include the Rabbitbrush solar facility, avoiding development on the 774-acre Chaparral site. This alternative would reduce the project's footprint from 1,406 acres to 632 acres and would only allow construction on the Rabbitbrush site. Solar panels and associated infrastructure would be located in the reduced project site. The reduced project acreage under this alternative is expected to contain enough land to construct a solar array field and related infrastructure capable of generating approximately 125 MW of renewable energy and storing 1,000 MWh of energy due to the proportional reduction in project size. This would result in the corresponding reduction in renewable energy output and storage capacity from the project by 50 percent. Similar to the proposed project, this alternative would still require the approval of two CUP applications (to allow for the construction and operation of 125 MW photovoltaic electrical generating facility (Section 19.12.030.G) with associated facilities (substation, O&M facility) in an A District and to allow a communication tower (Section 19.12.030.F) in an A District), two Specific Plan Amendment applications (to allow changes to land use classification and to eliminate future road reservations), one Zone Change application, and one Nonsummary Vacation application (vacation of public access easements).

1.7.6 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 1,406 acres of total rooftop area) may be required to attain project's capacity of 250 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 250 MW of electricity, but it would be for onsite use only. This alternative assumes that rooftop development would occur primarily on commercial and industrial structures due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed on site by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities.

1.7.7 Environmentally Superior Alternative

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

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

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Environmentally Superior Alternative is considered to be the No Ground-Mounted Utility-Solar Development Alternative. This alternative would avoid significant and unavoidable impacts to aesthetics, air quality, biological resources and wildfire. Impacts related to GHG emissions would be greater under this alternative due to the assumed lower efficiency of the distributed systems, which would not include solar tracking technology and it would not include ESS. This alternative could potentially result in greater impacts to land use and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, the No Ground-Mounted Utility-Solar Development 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, 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 250 MW of distributed solar generated electricity; additionally, doing so would be economically infeasible. In addition, this alternative would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Nonetheless, because this alternative reduces impacts to a greater degree than the General Plan and Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

1.8 Areas of Controversy

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

- Impacts related to agriculture

- Impacts related to air quality
- Impacts to cultural resources (archaeological resources)
- Impacts related to mineral resources
- Impacts related to biological resources

1.9 Issues to Be Resolved

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

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

1.10 Summary of Environmental Impacts and Mitigation Measures

Table 1-7, *Summary of Impacts, Mitigation Measures, and Level of Significance*, summarizes the environmental impacts of the project, mitigation measures, and unavoidable significant impacts identified and analyzed in Sections 4.1 through 4.18 of this EIR. Refer to the appropriate EIR section for additional information.

TABLE 1-7: 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 would be required.	Less than significant
Impact 4.1-2: The project would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.1-3: The project would, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality.	Potentially Significant	**MM 4.1-1:** Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program shall be submitted for review and approval to the Kern County Planning and Natural Resources Department. The program shall include, but not be limited to the following: a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities. b. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department. c. The project proponent/operator shall implement a regular trash removal and recycling program on an ongoing basis during construction and operation of the project. Barriers to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.	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
		d. Trash and food items shall be contained in closed secured containers at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs. **MM 4.1-2:** The project proponent shall install metal fence slats or similar view-screening materials, as approved by the Kern County Planning and Natural Resources Department, in all on-site perimeter fencing for any portion of the solar site that is adjacent to parcels zoned for residential use, including E (Estate Residential), R-1 (Low-Density Residential), R-2 (Medium-Density Residential), R-3 (High-Density Residential), or PL (Platted Lands) zoning unless the adjacent property is owned by the project proponent (to be verified by the Kern County Planning and Natural Resources Department) or a public or private agency that has submitted correspondence to the Kern County Planning and Natural Resources Department requesting this requirement to be waived. Should the project proponent sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale. **MM 4.1-3:** Prior to the issuance of the building permit for the solar facility, the project proponent/operator shall submit a proposed color scheme and treatment plan, for review and approval by the Kern County Panning and Natural Resources Department, that will ensure all project facilities including operations and maintenance buildings, collection line poles, array facilities, etc. blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes. **MM 4.1-4:** Wherever possible, within the proposed project boundary the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place. 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	

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
		for review and approval. The plan shall include the measures detailed below. a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) and/or allowed to re-vegetate with the existing native seed bank in the top soil where possible to establish revegetation. Areas that contain permanent features such as perimeter roads, maintenance roads or under arrays do not require revegetation. b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, and (4) a clear prohibition of the use of toxic rodenticides. c. Ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish re-vegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural Resources Department prior to planting. Phased seeding may be used if a phased construction approach is used (i.e., the entire site need not be seeded all at the same time). d. Vegetation/ground cover shall be continuously maintained on the site by the project operator. e. The re-vegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during the three-year periods, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for each of the three years. Should efforts to revegetate with the existing	

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
		native seed bank in the top soil prove in the second year to not be successful by 75 percent cover rate, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department and an additional year shall be added to the monitoring program to ensure coverage is achieved. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible.	
Impact 4.1-4: The project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.	Potentially significant	**MM 4.1-5:** Prior to commencement of project operations of the solar facility, the project proponent shall demonstrate to Kern County Planning and Natural Resources Staff that the project site complies with the applicable provisions of the *Dark Skies Ordinance* (Chapter 19.81 of the Kern County Zoning Ordinance), and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields. **MM 4.1-6:** Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department. **MM 4.1-7:** Prior to commencement of project operations of the solar facility, the project operator shall demonstrate that all onsite buildings utilized non-reflective materials, as approved by the Kern County Planning and Natural Resources Department.	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 4.1: Cumulative Impacts	Potentially Significant	Implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7 is required.	Significant and unavoidable (Visual Character) Less than significant (Scenic Vista, Scenic Resource; Light and Glare)
4.2 Agriculture and Forestry Resources			
Impact 4.2-1: The project would Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.	Less than significant	Implementation of Mitigation Measure MM 4.11-1 is required. (See 4.11, *Land Use and Planning*, for full mitigation measure text)	Less than significant
Impact 4.2-2: The project would conflict with existing zoning for agricultural use or Williamson Act Contract.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.2-3: The project would conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).	No impact	No mitigation would be 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 4.2-4: The project would result in the loss of forestland or conversion of forest land to non-forest use.	No impact	No mitigation would be required.	No impact
Impact 4.2-5: The project would involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.	Potentially significant	Implementation of Mitigation Measures MM 4.11-1 would be required. (See 4.11, *Land Use and Planning*, for full mitigation measure text)	Less than significant
Impact 4.2-6: The project would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 acres or more (Public Resources Code Section 15206(b)(3)).	Less than significant	No mitigation would be required.	Less than significant
Impact 4.2: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measure MM 4.11-1 would be required. (See 4.11, *Land Use and Planning*, for full mitigation measure text)	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, Operation and Decommissioning.** To control NO_X and PM emissions during construction, the project proponent/operator and/or its contractor(s) shall implement the following measures during construction of the project, subject to verification by the County: a. Off-road equipment engines over 25 horsepower shall be equipped with EPA Tier 3 or higher engines, unless Tier 3 construction equipment is not locally available.	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. All equipment shall be maintained in accordance with the manufacturer's specifications. c. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes. d. Notification shall be provided to trucks and vehicles in loading or unloading queues that their engines shall be turned off when not in use for more than 5 minutes. e. Electric equipment shall be used to the extent feasible in lieu of diesel or gasoline-powered equipment. f. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NOX emissions. g. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines. h. Existing electric power sources shall be used to the extent feasible. This measure would minimize the use of higher polluting gas or diesel generators. i. The hours of operation of heavy-duty equipment and/or the quantity of equipment in use shall be limited to the extent feasible. **MM 4.3-2: Implement Fugitive Dust Control Plan during Construction, Operations and Decommissioning.** To control fugitive PM emissions during construction, prior to the issuance of grading or building permits and any earthwork activities, the project proponent shall prepare a comprehensive Fugitive Dust Control Plan for review by the Kern County Planning and Natural Resources Department. The plan shall include all EKAPCD-recommended measures, including but not limited to, the following: a. All soil being actively excavated or graded shall be sufficiently water to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soils areas.	

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
		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 project-site access 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-	

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
		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 stabilized, 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.	

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 six inches 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	

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. u. Signs shall be posted at the project site entrance and written notifications shall be provided a minimum of 30 days prior to initiation of project construction to residential land uses located within 1,000 feet of the project site. The signs and written notifications shall include the following information: (a) Project Name; (b) Anticipated Construction Schedule(s); and (c) Telephone Number(s) for designated construction activity monitor(s) or, if established, a complaint hotline. v. The designated construction monitor shall document and immediately notify EKAPCD of any air quality complaints received. If necessary, the project operator and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints.	
Impact 4.3-2: The project would expose sensitive receptors to substantial pollutant concentrations.	Potentially significant	Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-2 would be required. **MM 4.3-3: Minimize Exposure to Potential Airborne Valley Fever–Containing Dust.** To minimize personnel and public exposure to potential Valley Fever–containing dust on and off site, the following control measures shall be implemented during project construction: a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations. b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground. c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.	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
		d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers being exposed to dust shall leave the area until a truck can resume water spraying. e. To the greatest extent feasible, heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system. f. Workers shall receive training in procedures to minimize activities that may result in the release of airborne *Coccidioides immitis* (CI) spores, to recognize the symptoms of Valley Fever, and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Kern County Planning and Natural Resources Department within 5 days of the training session. g. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department. h. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health–approved respirators shall be provided to onsite personal, upon request. When exposure to dust is unavoidable, provide appropriate NIOSH-approved respiratory protection to affected workers. If respiratory protection is deemed necessary, employers must develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard (8 CCR 5144). **MM 4.3-4:** At the time of project implementation, a COVID-19 Health and Safety Plan should be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy of the COVID-19 Health and	

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
		Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department for review and approval. **MM 4.3-5:** 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.	
Impact 4.3-3: The project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Less than significant	No mitigation would be required.	Less than significant
Cumulative Impacts **Impact 4.3-4:** 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 4.3-5 would be required.	Significant and unavoidable (Construction) Less than significant (Operation)

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	Implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, and MM 4.9-2 would be required (see Sections 4.1, *Aesthetics*, and 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text). **MM 4.4-1: Biological Monitoring.** Prior to the issuance of grading or building permits and prior to decommissioning, the project operator shall retain a Lead Biologist who meets the qualifications of an Authorized Biologist as defined by U.S. Fish and Wildlife Service to oversee compliance with protection measures for all listed and other special-status species. The Lead Biologist shall be on the project site during construction of perimeter fencing and grading activities throughout the construction phase, and as-needed during decommissioning. The Lead Biologist shall have the right to halt all activities that are in violation of the special-status species protection measures. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. The Lead Biologist shall have in her/his possession a copy of all the compliance measures and appropriate Plans while work is being conducted on the project site. **MM 4.4-2: Construction Worker Environmental Awareness Training and Education Program.** Prior to the issuance of grading or building permits and for the duration of construction and decommissioning activities, within one week of employment all new construction workers at the project site, laydown area and/or transmission routes shall attend an Environmental Awareness Training and Education Program, developed and presented by the Lead Biologist. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Environmental Awareness Training and Education Program. The program shall include information on the life history of the alkali mariposa lily, desert tortoise; burrowing owl; long-eared owl, golden eagle, Swainson's hawk, and other raptors; nesting	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
		birds; American badger; desert kit fox; as well as other wildlife and plant species that may be encountered 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 operator is implementing to protect the species, reporting requirements, specific measures that each worker shall employ to avoid take of wildlife species, and penalties for violation of the federal Endangered Species Act or California Endangered Species Act. a. An acknowledgement form signed by each worker indicating that Environmental Awareness Training and Education Program has been completed would be kept on record; b. A sticker shall be placed on hard hats indicating that the worker has completed the Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker; c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Environmental Awareness Training and Education Program and copies of the signed acknowledgement forms shall be submitted to the Kern County Planning and Community Development Department; d. The construction crews and contractor(s) shall be responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits; and e. An Operation and Maintenance-phase version of the WEAP will be maintained within the onsite O&M facility for review as may be necessary during the life of the project. **MM 4.4-3: Avoidance and Protection of Biological Resources.** During construction, operations and maintenance, and	

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
		decommissioning the project operator shall implement the following general avoidance and protective measures: a. All proposed impact areas, including solar fields, staging areas, access routes, and disposal or temporary placement of spoils, shall be delineated with stakes and/or flagging prior to construction to avoid natural resources where possible. Construction-related activities outside of the impact zone shall be avoided. b. The project operator shall limit the areas of disturbance to the extent feasible. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. These areas shall be flagged and disturbance activities, vehicles, and equipment shall be confined to these flagged areas. c. Spoils shall be stockpiled in disturbed areas that lack native vegetation. Best management practices shall be employed to prevent erosion in accordance with the project's approved stormwater pollution prevention plan (SWPPP). All detected erosion shall be remedied within 2 days of discovery or as described in the SWPPP. d. To prevent inadvertent entrapment of desert kit foxes, American badgers, or other wildlife during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks. All holes and trenches, whether covered or not, shall be inspected for trapped wildlife at the start and end of each workday. Before such holes or trenches are filled, they shall be thoroughly inspected by the Lead Biologist or approved biological monitor for trapped wildlife. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a listed species is found trapped, all work in the vicinity of the animal shall cease immediately. If the animal is apparently uninjured, then the	

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
		Lead Biologist shall directly supervise the provision of escape structures and/or trench modification to allow the trapped animal to escape safely. Work shall not resume in the vicinity of the animal, and it shall be allowed to leave the work area and project site on its own. If the listed animal is injured, then the Lead Biologist or approved biological monitor shall immediately contact the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife to identify an individual with the appropriate permit or authorization to handle listed species, who shall bring the animal to a pre-identified wildlife rehabilitation or veterinary facility for care. e. Burrowing owls, mammals, and nesting birds may use construction pipes, culverts, or similar structures for refuge or nesting. All towers shall be of the monopole variety and all hollow vertical structures, such as solar mount poles, or fencing poles, shall be capped immediately after installation to prevent bird entrapment. Therefore, all construction pipes, culverts, or similar structures with a diameter of 4 inches or more 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 until the Lead Biologist has been consulted and the animal has either moved from the structure on its own accord (for listed species) or until the animal has been captured and relocated (for non-listed species) by the Lead Biologist. If the animal is a listed species, then work shall immediately halt in the vicinity, and the animal shall be allowed to move from the structure and the work area of its own accord. The Lead Biologist will direct work stoppages near the animal to allow it to freely move out of the pipe and away from the work area. Listed species shall not be handled or captured by anyone without the appropriate permit or authorization. f. No vehicle or equipment parked on the project site shall be moved prior to inspecting the ground beneath the vehicle or	

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
		equipment for the presence of wildlife. If present, the animal shall be left to move on its own. g. 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. h. A speed limit of 15 miles per hour shall be enforced within the limits of the proposed project. i. A long-term trash abatement program shall be established for construction, operations and maintenance, and decommissioning. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs. j. Workers shall be prohibited from bringing pets and firearms to the project area and from feeding wildlife. k. Intentional killing or collection of any plant or wildlife species shall be prohibited. l. To enable kit foxes and other wildlife (e.g., American badger) to pass through the project site after construction, the security fence, and any permanent interior fencing shall be a wildlife friendly design that meets the goals of allowing wildlife to move freely through the project site during operation, leaving 4- to 7-inch openings or portals in the fence or the fence shall be raised 7 inches above the ground leaving a gap between the fence mesh and the ground. In the latter case the bottom of the fence fabric shall be knuckled (wrapped back to form a smooth edge) to protect wildlife that passes under the fence. **MM 4.4-4: Preconstruction Clearance Surveys.** During construction and decommissioning, the Lead Biologist or approved biological monitor shall monitor all initial ground-disturbance activities and remain on-call throughout construction/decommissioning in the event a special-status species wanders into the project 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
		Preconstruction surveys for special-status species shall be conducted within the project boundaries by the Lead Biologist or approved biological monitor within 14 days of the start of any vegetation clearing or grading activities. Methodology for preconstruction surveys shall be appropriate for each potentially occurring species-status species and shall follow U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife preconstruction survey guidelines where appropriate. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site being disturbed. The Lead Biologist may use a variety of approaches (including but not limited to monitoring, track plates, and direct observation) and evidence (including burrow characteristics and presence of sign such as scat and tracks) to determine burrow activity. 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. If desert tortoises are found onsite during subsequent surveys or biological monitoring activities, construction activities shall cease to avoid the potential for take and consultation with U.S. Fish and Wildlife Service and California Department of Fish and Wildlife shall be initiated to obtain the necessary incidental take permit authorizations or provide evidence such a permit is not required. Preconstruction surveys shall be conducted by a qualified biologist for the presence of American badger or desert kit fox dens within 14 days prior to commencement of construction activities. The surveys shall be conducted in the project site for American badger and desert kit fox. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days prior to that portion of the project site disturbed. If potential dens are observed and avoidance is feasible, the following buffer distances shall be established prior to construction activities: a. Desert kit fox or American badger potential den: 50 feet.	

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. Desert kit fox or American badger active den: 100 feet. c. Desert kit fox or American badger natal den: 500 feet. If avoidance of the potential dens is not possible, the following measures are required to avoid potential adverse effects to the American badger and desert kit fox: a. If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent American badgers or desert kit foxes from re-using them during construction. b. If the qualified biologist determines that potential dens may be active, an onsite passive relocation program shall be implemented. This program shall consist of excluding American badgers or desert kit foxes from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for 7 days to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the qualified biologist determines that American badgers or desert kit foxes have stopped using the dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction. During fencing and grading activities daily monitoring reports shall be prepared by the monitoring biologists. The Lead Biologist shall prepare a summary monitoring report documenting the effectiveness and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall activities conducted related to biological resources, including the Environmental Awareness Training and Education Program, clearance/pre-activity surveys, monitoring activities, and any observed special-status species, including injuries and fatalities. These monitoring reports shall be submitted to the Kern County Planning and Community Development Department and relevant resource agencies, as	

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
		applicable, on a monthly basis along with copies of all survey reports. **MM 4.4-5: Preconstruction Special-Status Plant Surveys.** Within 14 days prior to the commencement of any ground-disturbing activities, the project operator shall conduct preconstruction surveys for special-status and protected plant species within the project area, including but not limited to Joshua trees, cholla, beavertail cactus, alkali mariposa lily, Clokey's cryptantha, Rosamond eriastrum, sagebrush loeflingia, spreading navarretia, Latimer's woodland-gilia, salt spring checkerbloom, short-joint beavertail, and recurved larkspur. After the preconstruction survey determines the exact location of these species, if present, on the project site and the number of individuals or populations present, the project proponent/operator shall submit written documentation to the Kern County Planning and Natural Resources Department confirming implementation of the measures described below. a. The project proponent/operator shall work with a qualified biologist to determine presence of Clokey's cryptantha, Rosamond eriastrum, sagebrush loeflingia, spreading navarretia, Latimer's woodland-gilia, salt spring checkerbloom, short-joint beavertail, and recurved larkspur and identify all known locations of alkali mariposa lily to establish "avoidance areas". All special-status plants found within the project site shall be avoided by a buffer of 25 feet. 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. b. The project proponent/operate shall pay the required fee to remove Joshua trees, cholla, and beavertail cactus in	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		accordance with the California Desert Native Plant Act prior to construction activities. c. All alkali mariposa lilies that cannot feasibly be avoided in final project design shall have bulbs collected prior to construction. Additional, a transplantation plan for alkali mariposa lily will be submitted and approved by the County prior to ground disturbance and bulb collection. The plan will include the following: i. Identify an area of occupied habitat to be preserved and removed; ii. Identify areas of onsite or offsite preservation, restoration, or enhancement locations; iii. Methods for preservation, restoration, enhancement, and/or translocation iv. Indicate a replacement ratio and success standard of 1:1 for impacted to individuals v. Establish a monitoring program to ensure mitigation success vi. Create an adaptive management and remedial measures in the event that performance standards are not achieved vii. Ensure financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity. d. Any Clokey's cryptantha, Rosamond eriastrum, sagebrush loeflingia, Latimer's woodland-gilia, salt spring checkerbloom, short-joint beavertail, and recurved larkspur onsite individuals or 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, prior to ground disturbance of these areas. e. If any spreading navarretia individuals or populations are found onsite and cannot feasibly be avoided in final project	

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
		design, consultation with the U.S. Fish and Wildlife Service will be required prior to ground disturbing activities. f. Temporary ground disturbance associated with the gen-tie lines or collector lines shall be recontoured to natural grade (if the grade was modified during the temporary disturbance activity), and revegetated with an application of a native seed mix prior to or during seasonal rains to promote passive restoration of the area to pre-project conditions. However, if invasive plant species were present, these species would not be restored. An area subjected to temporary ground disturbance means any area that is disturbed but will not be subjected to further disturbance as part of the project. This does not include areas already designated as urban/developed. Prior to seeding temporary ground disturbance areas, the qualified biologist will review the seeding palette to ensure that no seeding of invasive plant species, as identified in the most recent version of the California Invasive Plant Inventory for the region, will occur. g. The project operator shall correspond with the County to determine what is needed for project compliance with the Willow Springs Specific Plan. **MM 4.4-6: Preconstruction Desert Tortoise Surveys.** Within 14 days prior to the commencement of any ground-disturbing activities, the project operator shall conduct preconstruction surveys for desert tortoise within the project area. The surveys shall be conducted in accordance with U.S. Fish and Wildlife Service (USFWS) protocol (2011). If no burrows or tortoises are discovered during preconstruction surveys, no further mitigation is necessary. The desert tortoise is a federally and state threatened species and, consequently, impacts that would cause "take" of the species would require the issuance of Incidental Take Permits from both USFWS and the California Department of Fish and Wildlife (CDFW) to comply with the federal Endangered Species Act and California Endangered Species Act. If burrows or tortoises are identified on the project site during preconstruction surveys, the project operator shall be required to consult with	

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Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		USFWS and CDFW regarding take coverage, and adhere to the following minimum conditions: a. Develop a plan for desert tortoise translocation and monitoring prior to project construction. The plan shall provide the framework for implementing the following measures: i. If, upon consultation with USFWS and CDFW, it is determined by both resource agencies that a permanent tortoise proof exclusion fence is required, a fence shall be installed around all construction and operation areas prior to the initiation of earth disturbing activities, in coordination with a qualified biologist. The fence shall be designed in such a manner to allow other wildlife to access through the permanent security fence and be constructed of 0.5-inch mesh hardware cloth and extend 18 inches above ground and 12 inches below ground. Where burial of the fence is not possible, the lower 12 inches shall be folded outward against the ground and fastened to the ground so as to prevent desert tortoise entry. The fence shall be supported sufficiently to maintain its integrity, be checked at least monthly during construction and operations, and maintained when necessary by the project operator to ensure its integrity. Provisions shall be made for closing off the fence at the point of vehicle entry. Common raven perching deterrents shall be installed as part of the fence construction. ii. An Authorized Biologist shall conduct a preconstruction survey for desert tortoise within the construction site, as well as before and after installation of desert tortoise exclusionary fencing (if required to be installed) and project security fencing. An Authorized Biologist has the appropriate education and experience to accomplish biological monitoring and mitigation tasks and is approved by CDFW and USFWS. Two surveys without finding any desert tortoises or new desert tortoise sign shall occur prior to declaring the site clear of desert tortoises.	

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. All burrows that could provide shelter for a desert tortoise shall be hand-excavated prior to ground-disturbing activities. iv. An Authorized Biologist shall remain onsite until all vegetation necessary for the construction of the project is cleared and, at a minimum, conduct site and fence inspections on a monthly basis throughout construction in order to ensure project compliance with mitigation measures. v. An Authorized Biologist shall remain on-call throughout fencing and grading activities in the event a desert tortoise wanders onto the project site. vi. Mitigation for permanent loss of occupied desert tortoise habitat shall be mitigated at a 1:1 ratio to reduce potential effects to less-than-significant levels. Mitigation can be achieved through purchase of credit from an existing mitigation bank, such as the Desert Tortoise Natural Area, private purchase of mitigation lands, or onsite preservation, as approved by the resource agencies. b. A Raven Management Plan shall be developed for the project site. This plan shall include at a minimum: i. Identification of all common raven nests within the project area during construction. ii. Weekly inspections during construction under all nests in the project area for evidence of desert tortoise predation (e.g., scutes, shells, etc.). If evidence of desert tortoise predation is noted, a report shall be submitted to USFWS, CDFW, and Kern County Planning and Community Development Department within five calendar days; and iii. Provisions for the management of trash that could attract common ravens during the construction, operations and maintenance, and decommissioning phases of the proposed project.	

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: Preconstruction Burrowing Owl Surveys. A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct preconstruction surveys of the permanent and temporary impact areas to locate active breeding or wintering burrowing owl burrows no fewer than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading, tilling). The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls. Surveys may be conducted concurrently with desert tortoise preconstruction surveys. As each burrow is investigated, surveying biologists shall also look for signs of American badger and desert kit fox. Copies of the survey results shall be submitted to CDFW and the Kern County Planning and Community Development Department. If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted within a buffer of no fewer than 100 meters (330 feet) from an active burrow during the breeding season (i.e., February 1 to August 31), unless otherwise authorized by CDFW. During the non-breeding (winter) season (i.e., September 1 to January 31), ground-disturbing work can proceed as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW. If burrow avoidance is infeasible during the non-breeding season or during the breeding season (February 1 through August 31) where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with Appendix E1 (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation.	

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 passive relocation is required, a qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and a Mitigation Land Management Plan in, accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation, for review by CDFW prior to passive relocation activities. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation. At a minimum, the following recommendations shall be implemented: a. Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions including decompacting soil and revegetating. b. Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows and burrowing owl impacted are replaced based on a site-specific analysis and shall include permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging, wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals. c. Permanently protect mitigation land through a conservation easement, deed restriction, or similar mechanism 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 operator may purchase available burrowing owl conservation bank credits. Land identified to mitigate for passive relocation of burrowing owl may be combined with other offsite mitigation requirements of the proposed project if the compensatory habitat is deemed suitable to support the species.	

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 4.4-8: Nesting Birds and Raptors. If construction is scheduled to commence during the non-nesting season (i.e., September 1 to January 31), no preconstruction surveys or additional measures are required. To avoid impacts to nesting birds in the project area, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within the project site for construction activities that are initiated during the breeding season (i.e., February 1 to August 31). The raptor survey shall focus on potential nest sites (e.g., cliffs, large trees, windrows) within a 0.5-mile buffer around the project site. Swainson's hawk nest survey shall focus on potential nest sites (e.g., cliffs, large trees, windrows) within a 5-mile buffer around the project site and follow the 2010 Swainson's hawk protocol surveys (CEC and CDFW 2010). Surveys shall be conducted no more than 14 days prior to construction activities. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur shortly before a portion of the project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. If active nests are found, a suitable no-disturbance buffer (e.g., 200–300 feet for common raptors; 0.5 mile for Swainson's hawk; 30–50 feet for passerine species) shall be established around active nests until a qualified biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest). For non-listed species, encroachment into the avoidance buffer may occur at the discretion of a qualified biologist; however, for State-listed species, consultation with CDFW shall occur prior to encroachment into the aforementioned buffers. **MM 4.4-9. APLIC Compliance.** The project proponent/operator shall install power lines in conformance with Avian Power Line Interaction Committee (APLIC) standards for electrocution-reducing techniques as outlined in suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), and for collision-reducing techniques as outlined in	

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
		Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), or any superseding document issued by APLIC.	
Impact 4.4-2: The project could 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	Implementation of Mitigation Measure MM 4.10-2 would be required (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text). **MM 4.4-10:** Prior to issuance of any grading or building permit, the project proponent/operator shall submit a final Jurisdictional Delineation report. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board, CDFW, and the County. The report shall include information as shown below as a plan if necessary and shall outline compliance to the following: a. Delineation of all jurisdictional features at the project site. Potential jurisdictional features (ephemeral drainages) within the project boundary identified in the jurisdictional delineation report that are not anticipated to be directly impacted by project related activities shall be avoided. This may be shown in plan form. b. Any material/spoils generated from project activities shall be located away from jurisdictional areas or special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate. c. Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from the top of bank. d. Any spillage of material will be stopped if it can be done safely. The contaminated area will be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative will be notified.	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 4.4-11: Prior to ground disturbance activities that would impact aquatic features, the project proponent/operator shall be subject to provisions as identified below: a. 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. Copies of reports shall be submitted to the County. b. Based on consultation with RWQCB and CDFW, if permits are required for the project site, appropriate permits shall be obtained prior to disturbance of jurisdictional resources. c. Compensatory mitigation for impacts to unvegetated streambeds/washes shall be identified prior to disturbance of the features at a minimum 1:1 ratio, as approved by the RWQCB or CDFW either through onsite or offsite mitigation, or purchasing credits from an approved mitigation bank. d. The project proponent/operator shall comply with the compensatory mitigation required and proof of compliance, along with copies of permits obtained from RWQCB and/or CDFW, which shall be provided to the County. e. A Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared that outlines the compensatory mitigation in coordination with the RWQCB and CDFW. i. If onsite mitigation is proposed, the HMMP shall identify those portions of the site, such as relocated drainage routes, that contain suitable characteristics (e.g., hydrology) for restoration. Determination of mitigation adequacy shall be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity (such as upstream or downstream of the site). ii. The HMMP shall include remedial measures in the event that performance criteria are not met.	

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. If mitigation is implemented offsite, mitigation lands shall be comprised of similar or higher quality and preferably located in Kern County. Offsite land shall be preserved through a deed restriction or conservation easement and the HMMP shall identify an approach for funding assurance for the long-term management of the conserved land. Alternatively, the applicant may purchase credits from an approved mitigation bank. iv. Copies of any coordination, permits, etc., with RWQCB and CDFW shall be provided to the County.	
Impact 4.4-3: The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.4-4: The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Potentially significant	Implementation of Mitigation Measure MM 4.1-5 through 4.1-7 would be required (see Section 4.1, *Aesthetics*, for full text).	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 4.4-5: 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 4.4-5 would be required. **MM 4.4-12:** Prior to the issuance of a grading permit, the project proponent/operator shall develop a Joshua Tree Preservation Plan. The Plan shall be prepared by a qualified biologist pre-approved by Kern County and shall be approved by the appropriate agencies, including Kern County, prior to implementation. At a minimum, the plan shall identify the methods utilized, as applicable, that the project is taking to comply with any CDFW CESA take requirements and compensatory mitigation related to the protection or mitigation of impacted Joshua Trees and documentation of any such CDFW take authorization and mitigation shall be provided to the Kern County Planning and Natural Resources Department.	Less than significant
Impact 4.4-6: The project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.4: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, MM 4.4-1 through MM 4.4-12, MM 4.9-2, and MM 4.10-2 would be required (see Sections 4.1, *Aesthetics*; 4.9, *Hazards and Hazardous Materials*; and 4.10, *Hydrology and Water Quality* for full mitigation measure text).	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
4.5 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 historical resources. The contact information for this Lead Archaeologist shall be provided to the Kern County Planning and Natural Resources Department prior to the commencement of any construction activities on-site. Further, the Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project: a. Prior to commencement of any ground disturbing activities, the Lead Archaeologist, in consultation with the Native American monitor(s), shall prepare Cultural Resources Sensitivity Training materials to be used in orientation program given to 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. b. The project proponent/operator shall ensure all new employees or onsite workers who have not participated in earlier Cultural Resources Sensitivity Trainings shall meet provisions specified above. c. 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 penalties	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
		for unauthorized artifact collecting or intentional disturbance of archaeological resources. d. 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 commencing work on-site. e. During implementation of the project, the services of Native American tribal monitors, as identified through consultation with appropriate Native American tribes, working under the supervision of the Lead Archaeologist, shall be retained by the project to monitor project-related construction activities as identified in Mitigation Measures MM 4.5-2 through MM 4.5-4. **MM 4.5-2:** Prior to the issuance of any grading or building permit, the project operator shall submit to the Kern County Planning and Natural Resources Department a Cultural Resources Treatment Plan. The plan shall: a. Require that prior to conducting initial ground disturbance in the vicinity of prehistoric archaeological sites within the Chaparral Site (P-15-019556 and P-15-019559), and in coordination with the Lead Archaeologist and Native American monitor(s), exclusion areas (i.e., the recorded boundaries of the archaeological sites and all areas within 25 feet thereof) shall be temporarily marked with exclusion markers or protective fencing as determined by the Lead Archaeologist in consultation with the Native American monitor. b. Require that the construction zone shall be narrowed or otherwise altered to avoid the exclusion areas around sites P-15-019556 and P-15-019559.	

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. Provide an overview of best management practices to be utilized during construction activities to ensure protection of cultural resources. d. Outline the process for evaluation of any unanticipated cultural discoveries during project construction activities. **MM 4.5-3:** During implementation of the project, the services of both Archaeological and Native American Tribal Monitors, working under the supervision of the Lead Archaeologist as identified through consultation with appropriate Native American tribes, shall be retained by the project proponent/operator to monitor, on a full-time basis, ground-disturbing activities associated with project-related construction activities, as follows: a. All ground-disturbing activities within 50 feet of prehistoric archaeological sites P-15-019556 and P-15-019559, within the Chaparral Site, shall be monitored by Native American Tribal Monitors and Archaeological monitors. b. During implementation of the Chaparral Facility portion of the project, Archaeological and Native American monitoring shall be conducted for all excavation or grading activities north of the centerline of the Truman Road alignment. If no archaeological discoveries are made during the course of this monitoring, no additional monitoring will be required. 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, may adjust the level of monitoring to circumstances as warranted. c. All ground-disturbing activities within 100 feet of the grave site associated with AVEP-RA-31, within the Rabbitbrush Site, as documented on historic maps, shall be monitored by Native American Tribal Monitors and Archaeological monitors. d. For all other ground-disturbing activities within the project area, initial excavation or ground-disturbing activities shall be monitored by Archaeological and Native American monitors.	

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
		During the course of this initial monitoring, if the Lead Archaeologist can demonstrate that the level of monitoring should be reduced or discontinued, or if the Lead Archaeologist can demonstrate a need for continuing monitoring, the Lead Archaeologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances as warranted. e. The Archaeological monitors and Native American monitors shall work under the supervision of the Lead Archaeologist. The Lead Archaeologist, Archaeological monitors, and Native American monitors shall be provided all project documentation related to cultural resources within the project site prior to commencement of ground disturbance activities. Should the services of any additional individuals be retained (as the Lead Archaeologist, Archaeological monitor, or Native American monitor) subsequent to commencement of ground disturbing activities, such individuals shall be provided all proposed project documentation related to cultural resources within the project area, prior to beginning work. Documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the Lead Archaeologist, Archaeological monitor, and Native American monitor. f. 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 and to the San Manuel Band of Mission Indians. 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, the San Manuel Band of Mission Indians, and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.	

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 4.5-4: During implementation of the project, in the event archaeological materials are encountered during the course of grading or construction, the project contractor shall cease any ground disturbing activities within 50 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 50-foot radius from the location of discovery. Signs shall be posted that establish it as an Environmentally Sensitive Area and all entrance to the area shall be avoided until the discovery is assessed by the Lead Archaeologist, as well as the San Manuel Band of Mission Indians if the discovery involves resources of interest to Native American tribes, including but not limited to prehistoric archaeological sites or tribal cultural resources. The Lead Archaeologist in consultation with the San Manuel Band of Mission Indians, if appropriate, shall evaluate the significance of the resources and recommend appropriate treatment measures. If further treatment of the discovery is necessary, the Environmentally Sensitive Area shall remain in place until all work is completed. Per California Environmental Quality Act (CEQA) *Guidelines* Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA *Guidelines* Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist in consultation with the San Manuel Band of Mission Indians shall develop additional treatment measures in consultation with the County, which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. All resources of concern/interest to Native American tribes that cannot be avoided shall be reburied on site as close to the original find location as possible, and within an area that will not be subjected to disturbance in the future. Archaeological materials not of concern/interest to Native American tribes recovered during any investigation shall be curated at an accredited curation facility.	

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 Lead Archaeologist, in consultation with the San Manuel Band of Mission Indians, 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, the San Manuel Band of Mission Indians, and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.	
Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5.	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required.	Less than significant
Impact 4.5-3: The project would disturb human remains, including those interred outside of formal cemeteries.	Potentially significant	Implementation of Mitigation Measure MM 4.5-3 would be required. **MM 4.5-5:** If human remains are uncovered during project construction, the project contractor shall immediately halt work within 100 feet of the find, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in of the California Environmental Quality Act *Guidelines* Section 15064.4(e)(1). If the County Coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code (PRC) Section 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent for the remains per PRC Section 5097.98. Per PRC Section 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	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
		origin, provisions of the California Health and Safety Code (Section 7100 et. seq.) directing identification of the next-of-kin will apply.	
Impact 4.5: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5 would be required.	Less than significant
4.6 Energy			
Impact 4.6-1: The project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	Potentially significant	Implementation of Mitigation Measure MM 4.3-1 (see Section 4.3, *Air Quality*, of this EIR, for full mitigation measure text).	Less than significant
Impact 4.6-2: The project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.6: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measure MM 4.3-1 would be required (see Section 4.3, *Air Quality*, of this EIR, for full mitigation measure text).	Less than significant
4.7 Geology and Soils			
Impact 4.7-1: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo earthquake fault zoning map issued by the state geologist for the area or based on other substantial evidence of a known fault.	Less than significant	No mitigation 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 4.7-2: 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 project, the project proponent shall conduct a final engineering design specific geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it to the Kern County Public Works Department for review and approval. a. The final geotechnical study must be signed by a California-registered and licensed professional geotechnical engineer or engineering geologist and must include, but not be limited to, the following: i. Location of fault traces and potential for surface rupture and groundshaking potential; ii. Maximum considered earthquake and associated ground acceleration for design; iii. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils; iv. Stability of any existing or proposed cut-and-fill slopes; v. Collapsible or expansive soils; vi. Foundation material type; vii. Potential for wind erosion, water erosion, sedimentation, and flooding; viii. Location and description of unprotected drainage that could be impacted by the proposed development; and, ix. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground. b. The project proponent shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent shall not locate project facilities on or immediately adjacent to an active fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to accurately locate the fault trace(s) to avoid sighting improvements on or close to these	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
		fault structures and to evaluate the risk of fault rupture. After locating the fault, accurate setback distances can be proposed. c. The final geotechnical report shall be submitted for review and approval by the Kern County Public Works Department. The Kern County Public Works Department shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided. Final design requirements shall also be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the Kern County Planning and Natural Resources Department.	
Impact 4.7-3: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: seismic-related ground failure including liquefaction.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.7-4: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: landslides.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.7-5: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: substantial soil erosion or the loss of topsoil.	Potentially significant	Implement Mitigation Measures MM 4.7-1 and MM 4.10-2 (see Section 4.10, *Hydrology and Water Quality*, of this EIR, for full mitigation measure text).	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 4.7-6: The project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	Potentially significant	Implementation of Mitigation Measure MM 4.7-1 would be required.	Less than significant
Impact 4.7-7: The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	Potentially significant	Implementation of Mitigation Measure MM 4.7-1 would be required.	Less than significant
Impact 4.7-8: The project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.7-9: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially significant	**MM 4.7-2:** 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. a. 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. The training guide may be presented in video form.	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. Paleontological Resources Awareness Training may be conducted in conjunction with other awareness training requirements. c. The training shall include an overview of potential paleontological resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources. d. The project operator shall ensure all new employees who have not participated in earlier Paleontological Resources Sensitivity Trainings shall meet the provisions specified above. e. The Paleontological Resources Awareness Training Guides shall be kept available for all personnel to review and be familiar with as necessary. **MM 4.7-3:** A qualified paleontologist or designated monitor shall be onsite initially to spot-check excavations below a depth of one foot below the ground surface in areas of undetermined paleontological potential. If it is determined that sediments consist of older alluvium, then full-time paleontological monitoring shall ensue within that area. If sediments are determined to consist of Holocene Quaternary alluvium, paleontological monitoring shall not be required unless an excavation depth of 15 feet below the ground surface is reached in the area. The use of post-driving or rotary drilling shall not require monitoring. a. The duration and timing of monitoring shall be determined by the qualified paleontologist in consultation with the Kern County Planning and Natural Resources Department, and shall be based on a review of geologic maps and grading plans. i. During the course of monitoring, if the paleontologist can demonstrate based on observations of subsurface conditions that the level of monitoring should be reduced, the paleontologist, in consultation with the Kern County	

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
		Planning and Natural Resources Department, may adjust the level of monitoring to circumstances, as warranted. b. Paleontological monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments. The qualified paleontologist shall have authority to temporarily divert excavation operations away from exposed fossils to collect associated data and recover the fossil specimens if deemed necessary. c. Following the completion of construction, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources onsite. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, recovery and curation efforts, and the methods used in these efforts, as well as describe the fossils collected and their significance. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to an appropriate repository such as the Natural History Museum of Los Angeles County. **MM 4.7-4:** 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	Potentially significant	Implementation of Mitigation Measures MM 4.7-1 through MM 4.7-4 and MM 4.10-2 would be required (see Section 4.10, *Hydrology and Water Quality*, of this EIR, for full mitigation measure text).	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 Gas Emissions			
Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than significant	No mitigation would be 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 gas.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.8: Cumulative Impacts	Less than significant	No mitigation would be 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	Implementation of Mitigation Measure MM 4.17-1 is required (see Section 4.17, *Utilities and System Services*, for full mitigation measure text). **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: a. Delineate hazardous material and hazardous waste storage areas b. Describe proper handling, storage, transport, and disposal techniques c. Describe methods to be used to avoid spills and minimize impacts in the event of a spill	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
		d. Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction and operation e. Establish public and agency notification procedures for spills and other emergencies including fires f. Describe federal, state, or local agency coordination, as applicable, and clean-up efforts that would occur in the event of an accidental release. g. Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site The project proponent shall ensure that all contractors working on the project are familiar with the facility's HMBP as well as ensure that one copy is available at the project site at all times. In addition, a copy of the accepted HMBP from CERS shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the projects permanent record.	
Impact 4.9-2: The project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Potentially significant	Implementation of Mitigation Measures MM 4.9-1 and MM 4.17-1 would be required (see Section 4.17, *Utilities and System Services*, for full mitigation measure text). **MM 4.9-2:** The project proponent/operator shall continuously comply with the following: a. The construction contractor or project personnel shall use herbicides that are approved 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	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
		sheets for all hazardous materials to be used. To minimize harm to wildlife, vegetation, and water bodies, herbicides shall not be applied directly to wildlife. d. Products identified as non-toxic to birds and small mammals shall be used if nests or dens are observed; and herbicides shall not be applied if it is raining at the site, rain is imminent, or the target area has puddles or standing water. e. Herbicides shall not be applied when wind velocity exceeds 10 miles per hour. If spray is observed to be drifting to a non-target location, spraying shall be discontinued until conditions causing the drift have abated. f. A written record of all herbicide applications on the site, including dates and amounts, shall be furnished annually to the Kern County Planning and Natural Resources Department.	
Impact 4.9-3: The project would emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.9-4: The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.9-5: The project would result in a safety hazard or excessive noise for people residing or working in the project area, for a project located within the adopted Kern County Airport Land Use Plan.	No impact	No mitigation would be 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 4.9-6: The project would impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.	No impact	No mitigation would be required.	No impact
Impact 4.9-7: 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 would be required (see Section 4.14, *Pubic Services*, for full mitigation measure text).	Less than significant
Impact 4.9-8: The project would generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, the project would not 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; or ii. Are associated with design, layout, and management of project operations; or iii. Disseminate widely from the property; or iv. Cause detrimental effects on the public health or well-being of the	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
majority of the surrounding population.			
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 (see Sections 4.14, *Public Services*; 4.17, *Utilities and System Services*, respectively, for full mitigation measure text).	Less than significant
4.10 Hydrology and Water Quality			
Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise degrade surface or groundwater water quality.	Potentially significant	Implementation of Mitigation Measure MM 4.9-1 would be required (see Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text). **MM 4.10-1:** Prior to issuance of a grading permit, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan (SWPPP) for review and approval by the Kern County Planning and Natural Resources Department and/or Kern County Public Works Department. The SWPPP shall be designed to minimize runoff and shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment or any other pollutants from moving offsite and into receiving waters. The requirements of the SWPPP shall be incorporated into design specifications and construction contracts. Recommended best management practices to be incorporated in the SWPPP may include the following: a. Minimization of vegetation removal; b. Implementing sediment controls, including silt fences a necessary; c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas; d. Properly containing and disposing of hazardous materials used for construction onsite; e. Properly covering stockpiled soils to prevent wind erosion; f. Proper protections and containment for fueling and maintenance of equipment and vehicles; and	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
		g. Appropriate disposal of demolition debris, concrete and soil, and aggressively controlling litter. h. Cleanup of silt and mud on adjacent street due to construction activity. i. Checking all lined and unlined ditches after each rainfall. j. Restore all erosion control devices to working order to the satisfaction of the Kern County Planning and Natural Resources Department and/or Kern County Public Works Department after each rainfall run-off. k. Install additional erosion control measures as may be required due to uncompleted grading operations or unforeseen circumstances which may arise. **MM 4.10-2:** Prior to the issuance of a grading permit, the project proponent/operator shall complete a hydrologic study and final drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study shall include, but is not limited to the following: a. A numerical stormwater model for the project site that evaluates existing and proposed (with project) drainage conditions during storm events ranging up to the 100-year event. b. The study shall also consider potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation. c. Engineering recommendations to be incorporated into the project design and applied within the site boundary. Engineering recommendations will include measures to offset increases in stormwater runoff that would result from the project, as well as implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding onsite or offsite.	

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. A specification that the final design of the solar arrays shall include one foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Solar panel sites located within a 100-year floodplain shall be graded to direct potential flood waters without increasing the water surface elevations more than one foot or as required by Kern County's Floodplain Management Ordinance. e. The hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code and Kern County Development Standards, and approved by the Kern County Public Works Department prior to the issuance of grading permits.	
Impact 4.10-2: The project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Less than significant	Implementation of Mitigation Measure MM 4.10-1 would be 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 than would result in substantial erosion and/or sedimentation on-site or off-site.	Potentially significant	Implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2 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 4.10-4: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite.	Potentially significant	Implementation of Mitigation Measure MM 4.10-2 would be required.	Less than significant
Impact 4.10-5: The project would create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Potentially significant	Implementation of Mitigation Measure MM 4.10-2 would be required.	Less than significant
Impact 4.10-6: The project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.	Potentially significant	Implementation of Mitigation Measure MM 4.10-2 would be required.	Less than significant
Impact 4.10-7: The project would result in a flood hazard, tsunami, or seiche zone, that would risk release of pollutants due to project inundation.	Potentially significant	Implementation of Mitigation Measure MM 4.10-2 would be required.	Less than significant
Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than significant	No mitigation 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: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.9-1, MM 4.10-1 and MM 4.10-2 would be required (see 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).	Less than significant
4.11 Land Use			
Impact 4.11-1: The project would cause a significant environmental impact due to physically dividing an established community.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.11-2: The project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.11: Cumulative Impacts	Potentially significant	**MM 4.11-1:** Prior to issuance of any building permit, the project operator shall provide a Decommission Plan for review and approval by the Kern County Public Works Department or a County-contracted consulting firm at a cost to be borne by the project operator. The Decommission Plan shall factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from removal of support structures, and control of fugitive dust on the remaining undeveloped land. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations. The assumption, when preparing the estimate, is that the project operator is incapable of performing the work or has abandoned the solar facility, thereby requiring Kern County to hire an independent contractor to perform the decommissioning work. In addition to submitting a Decommission Plan, the project operator shall post or establish and maintain financial assurances with Kern County related to the decommissioning of the site as identified on the approved Decommission Plan in the event that at any point in time the	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
		project operator determines it is not in the company's best interest to operate the facility. The financial assurance required prior to issuance of any building permit shall be established using one of the following: a. An irrevocable letter of credit; b. A surety bond; c. A trust fund in accordance with the approved financial assurances to guarantee the decommissioning work will be completed in accordance with the approved decommission plan; or d. Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department. The financial institution or Surety Company shall give the County at least 120 days' notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed annually by the Kern County Public Works Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate those adequate funds exist to ensure decommissioning of all solar panels and support structures identified on the approved Decommission Plan. Should the project operator decommission the site on their own, the County will not pursue forfeiture of the financial assurance. Once decommissioning has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommissioning of the site by the County shall be returned to the project operator. Should any portion of the solar field not be in operational condition for a consecutive period of twelve 12 months that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project operator, by the County. Within this sixty (60) day period,	

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 property owner, solar field owner, or project operator may provide the director of the Kern County Planning and Natural Resources Department a written request and justification for an extension for an additional twelve (12) months. The Kern County Planning and Natural Resources Director shall consider any such request at a Director's Hearing as provided for in Section 19.102.070 of the Kern County Zoning Ordinance. In no case shall a solar field that has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date, the solar facility was first deemed abandoned. **MM 4.11-2:** Prior to the operation of the solar facility, the operator shall consult with the Department of Defense to identify the appropriate Frequency Management Office officials to coordinate the use of telemetry to avoid potential frequency conflicts with military operations.	
4.12 Mineral Resources			
Impact 4.12-1: The project would result in the loss of availability of a known mineral resource that would be of value to the region and residents of the State.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.12-2: The project would result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.12-3: 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
4.13 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.	Potentially significant	**MM 4.13-1:** The following measures are to be implemented to further reduce short-term noise levels associated with project construction and decommissioning: a. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and between 9:00 p.m. to 8:00 a.m. on weekends. These hourly limitations shall not apply to activities where hourly limitations would result in increased safety risk to workers or the public, such as commissioning and maintenance activities that must occur after dark to ensure photovoltaic arrays are not energized, unanticipated emergencies requiring immediate attention, or security patrols. b. Equipment staging and laydown areas shall be located at the furthest practical distance from nearby residential land uses. To the extent possible, staging and laydown areas should be located at least 500 feet of existing residential dwellings. c. Construction equipment shall be fitted with noise-reduction features such as mufflers and engine shrouds that are no less effective than those originally installed by the manufacturer. d. Haul trucks shall not be allowed to idle for periods greater than five minutes, except as needed to perform a specified function (e.g., concrete mixing). e. On-site vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency). f. Back-up beepers for all construction equipment and vehicles shall be broadband sound alarms or adjusted to the lowest noise levels possible, provided that the Occupational Safety and Health Administration and California Division of Occupational Safety and Health's safety requirements are not violated. On vehicles where back-up beepers are not available,	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
		alternative safety measures such as escorts and spotters shall be employed. **MM 4.13-2:** Prior to the issuance of grading permits, a "noise disturbance coordinator" shall be established. The project operator shall submit evidence of methods of implementation and shall continuously comply with the following during construction: The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable measures such that the complaint is resolved. **MM 4.13-3:** Prior to the issuance of grading permits, the project operator shall submit evidence of the following: Construction contracts shall specify that notices shall be sent out to all residences within 1,000 feet of the construction areas at least 15 days prior to commencement of construction. The notices shall include the construction's schedule and a telephone number where complaints can be registered with the noise disturbance coordinator. A sign legible at a distance of 50 feet shall also be posted at the construction site throughout construction, which includes the same details as the notices.	
Impact 4.13-2: The project would generate excessive groundborne vibration or groundborne 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

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 4.13-4: The project is not located within the Kern County Airport Land Use Compatibility Plan and would not expose people residing or working in the area to excessive noise levels.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.13: Cumulative Impacts	Potentially significant	Mitigation Measures MM 4.13-1 through MM 4.13-3 would be required.	Less than significant
4.14 Public Services			
Impact 4.14-1: The project would result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services, law enforcement protection and law enforcement services, schools, parks, or other public facilities.	Potentially significant	**MM 4.14-1:** Prior to the issuance of grading or building permits the project proponent/operator shall develop and implement a fire safety plan for use during construction, operation and decommissioning. The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. A copy of the approved Fire Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following: a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order. b. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types will maintain their factory-installed (type) muffler in good condition. c. Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees. d. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials. e. Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance	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
		personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats. f. The project proponent/operator shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel. **MM 4.14-2:** The following Cumulative Impact Charge (CIC) shall be implemented as payment on approved Conditional Use Permit acreage. a. Submittal of Building Permit and Phasing i. Any building permit submitted shall be accompanied by a map and legal description showing a defined phase for which permits are being requested. All phases shall be numbered sequentially for identification. ii. The map for either the total project or a phase shall calculate the Cumulative Impact Charge (CIC) net acreage as follows: a) Total gross acreage (Phase) b) Total acres for Operations and Maintenance building permanent accessory improvements c) Total acres for Energy Storage structure and permanent accessory improvements d) Total acres of recorded easements iii. Formula: Net Acreage = (ii)a minus the sum of [(ii)b + (ii)c + (ii)d]. iv. Temporary storage areas or non-permanent commercial coaches or cargo containers for construction or operations are not eligible for inclusion under (ii)b or (ii)c, above.	

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
		v. All areas of buildings, accessory improvements and easement used in the calculations shall be shown on the submitted Phase Map. vi. Any property included in the approved Conditional Use Permit that is not included in a phase must be included in the last phase or a formal modification processed to remove it from the Conditional Use Permit. b. Calculation and Payment of Cumulative Impact Charge (CIC) i. A payment of $620 per net acre for the map shown with the building permit submittal shall be paid upon issuance of the first building permit. If it is not paid within 30 days after the issuance of the first building permit for the phase regardless of the total number of building permits or type of building permit issued, all such permits shall be suspended until the fee is paid in full. ii. Payments shall be made to the Planning and Natural Resources Department for transfer directly to the County Administrative Office Fiscal Division (CAO) and labeled Cumulative Impact Charge (CIC) with the project name and phase number. iii. Any acres denoted for an operation and maintenance building or energy storage that are not built, cannot be used for solar panels unless payment is provided for the Cumulative Impact Charge (CIC) **MM 4.14-3:** Written verification of ownership of the project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company with assessed taxes that total less than $3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of $3,000 per megawatt. The amount shall be paid for all years of operation. 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
		MM 4.14-4: The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project proponent/operator obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization. As an alternative to the aforementioned process, the project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes. **MM 4.14-5:** Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors 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 through MM 4.14-5 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
4.15 Transportation and Traffic			
Impact 4.15-1: The project would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows: Kern County General Plan LOS "D."	Less than significant	**MM 4.15-1:** Prior to the issuance of construction or building permits for each Facility, the project proponent/operator shall implement measures to ensure peak hour construction worker vehicle limits are maintained during the AM and PM peak hours in order to maintain LOS D or better at the study intersections. These measures may include, but are not limited to the following: a. The Construction Traffic Control Plan (see MM 4.15-2, below) shall outline the methods used to count worker vehicle traffic arriving and departing from the project site during peak AM and PM hours, methods used to control the number of trips during these hours, and documentation of reasonable coordination efforts with other projects in the area to avoid impacts to study intersections. b. The project proponent/operator shall limit construction worker vehicle trips to and from the site to the extent possible during the AM and PM peak periods (i.e., 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.). c. If monitoring indicates that either AM or PM peak hour construction trips may exceed the peak hour construction worker vehicle limits, the project proponent/operator shall implement measures to reduce peak hour passenger vehicle trips. These measures could include: i. Scheduling construction worker shifts so that a majority of the workers arrive and depart the project site outside the AM and PM peak periods. ii. Staggering construction worker shifts so that construction worker vehicle trips are distributed over a broader period (i.e., construction workers arrive in staggered shifts starting from 6:00 a.m. and depart in staggered shifts starting from 2:00 p.m.). iii. Instituting incentives and providing options for construction workers to carpool and/or vanpool to and from the project site.	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 4.15-2: Prior to the issuance of construction or building permits for each Facility, the project proponent/operator shall: a. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 9, as appropriate, for approval. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and must include, but not be limited to, the following issues: i. Timing of deliveries of heavy equipment and building materials. To the extent feasible, restrict deliveries and vendor vehicle arrivals and departures during either the AM and PM peak periods; ii. Directing construction traffic with flaggers along the Rosamond Corridor; iii. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic; iv. Ensuring access for emergency vehicles to the project sites; v. Coordinate construction activities with nearby schools that could be affected by increased vehicle delay along Rosamond Boulevard (i.e., Tropico Middle School and Rosamond High School); vi. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections; vii. Maintaining access to adjacent property; viii. Specifying both construction-related vehicle travel and oversize load haul routes and avoiding residential neighborhoods to the maximum extent feasible; and	

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
		ix. Consult with the County to develop coordinated plans that would address construction-related vehicle routing and detours adjacent to the construction area for the duration of construction overlap with neighboring projects. Key coordination meetings would be held jointly between applicants and contractors of other projects for which the County determines impacts could overlap. b. 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 Caltrans. c. Enter into a secured agreement with Kern County to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and/or Kern County. d. Submit documentation that identifies the roads to be used during construction. The project proponent/operator shall be responsible for repairing any damage to non-county maintained roads that may result from construction activities. The project proponent/operator shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the Kern County Public Work Department-Development Review and the Kern County Planning and Natural Resources Department. e. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log and inspection report to the County. This information shall be submitted in DVD format. The County, in consultation with the project proponent/operator's engineer, shall determine the extent of remediation required, if any.	

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 4.15-2: The project would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).	Less than significant	No mitigation would be required.	Less than significant
Impact 4.15-3: The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Potentially significant	Implementation of Mitigation Measure MM 4.15-2 would be required	Less than significant
Impact 4.15-4: The project would result in inadequate emergency access.	Potentially significant	Implementation of Mitigation Measures MM 4.15-1 and MM 4.15-2 would be required.	Less than significant
Impact 4.15: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measure MM 4.15-1 and MM 4.15-2 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).	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
Impact 4.16-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.16: Cumulative Impacts	Less than significant	No mitigation would be required.	Less than significant
4.17 Utilities and Service Systems			
Impact 4.17-1: The project would require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	Potentially significant	Implementation of Mitigation Measures MM 4.10-1 would be required (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text).	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 4.17-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.17-3: The project would result in a determination by the waste water treatment provider which may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than significant	No mitigation 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 4.17-4: 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. The provisions listed below shall apply to the project. a. An onsite Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance and Decommissioning, Trash Abatement and Pest Management Program. b. The Recycling Coordinator shall facilitate recycling of all construction waste through coordination with contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. c. The onsite Recycling Coordinator shall also be responsible for ensuring wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal d. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits. e. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations and decommissioning. A site plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site.	Less than significant
Impact 4.17-5: 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 would be required.	Less than significant
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 mitigation measure text).	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
4.18 Wildfire			
Impact 4.18-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.18-2: The project would, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	Less than significant	No mitigation would be required.	Less than significant
Impact 4.18-3: The project would require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	Potentially significant	Implementation of Mitigation Measure MM 4.14-1 would be required (see Section 4.14, *Public Services*, for full mitigation measure text).	Less than significant
Impact 4.18-4: The project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes.	Potentially significant	Implementation of Mitigation Measure MM 4.10-1 would be required (see Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text).	Less than significant
Impact 4.18: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1 would be required (see Sections 4.10, *Hydrology and Water Quality,* and 4.14, *Public Services*, for full mitigation measure text).	Significant and unavoidable

Chapter 2
Introduction

2.1 Intent of the California Environmental Quality Act

The Kern County Planning and Natural Resources Department, as lead agency, has determined that an Environmental Impact Report (EIR) must be prepared for the proposed AVEP Solar Project (project). The project proposes to develop two photovoltaic (PV) solar facilities (Chaparral Solar Facility and Rabbitbrush Solar Facility) and associated infrastructure located on approximately 1,406-acres and would generate a combined total of 250 megawatts (MW) of renewable electrical energy including associated energy storage systems in unincorporated Kern County.

The proposed project consists of two sites: the 774-acre Chaparral Solar Facility, and the 632-acre Rabbitbrush Solar Facility (1,406 acres total). Collectively, these sites are referred to as the project site. The proposed project would be built either collectively at the same time or alternatively as two approximately 125 MW facilities on the approximately 774-acre Chaparral site, 632-acre Rabbitbrush site as power purchase agreements are entered for each facility. Depending upon market conditions, the Chaparral and Rabbitbrush facilities may also each include or be developed with an energy storage system (ESS) with the capacity to store up to 1,000 megawatt-hours (MWh) of energy (for a combined project total of up to 2,000 MWh). The energy storage system on the Chaparral Site could be charged by energy generated by the Chaparral Facility, and/or it could be charged by energy from the electrical grid. The energy storage system on the Rabbitbrush Site could be charged by energy generated by the Rabbitbrush Facility, and/or it could be charged by energy from the electrical grid. Each ESS would be located on approximately five acres of land within each facility site. Power generated by the proposed project would be transferred via proposed collection lines, and then via an existing 230 kV gen-tie line to the SCE Whirlwind Substation.

This EIR has been prepared pursuant to the following:

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

The overall purposes of the CEQA process are to:

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

2.2 Purpose of this Environmental Impact Report

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

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

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

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

2.2.1 Issues to Be Resolved

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

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

2.3 Terminology

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

- *Project* means the whole of an action that has the potential for resulting in a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.

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

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

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

- *Significant and unavoidable.* An impact that exceeds the defined thresholds of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures.

2.4 Decision-Making Process

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

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

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

2.4.1 Notice of Preparation/Initial Study

Pursuant to Section 15082 of the *CEQA Guidelines*, as amended, the Kern County Planning and Natural Resources Department circulated an NOP/IS to the State Clearinghouse, public agencies, special districts, and members of the public for a public review period beginning September 10, 2019 and ending on October 10, 2019. The NOP/IS was also posted in the Kern County Clerk's office for 30 days and sent to the State Clearinghouse at the Governor's Office of Planning and Research to solicit Statewide agency participation in determining the scope of the EIR.

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

2.4.2 Scoping Meeting

Pursuant to Section 15082 (c)(1) of the *CEQA Guidelines*, for projects of statewide, regional, or area-wide significance, the lead agency is required to conduct at least one scoping meeting. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding, but not limited to, the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed. Kern County hosted a scoping meeting on October 4, 2019, at the Kern County Planning and Natural Resources Department, located at 2700 "M" Street, Suite 100, Bakersfield, California.

Notice of Preparation/Initial Study and Scoping Meeting Results

During the October 4, 2019 scoping meeting, no members of the public were present and no testimony was given. Furthermore, 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.

IS/NOP Written Comments

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

TABLE 2-1: SUMMARY OF IS/NOP COMMENTS

Commenter/Date	Summary of Comment
State Agencies	
State Clearinghouse September 10, 2019	The commenter acknowledges the receipt of the NOP.
California Department of Conservation (CDOC) Division of Oil, Gas, and Geothermal Resources September 18, 2018	The 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.
CDOC Division of Land Resource Protection September 24, 2019	The commenter recommends the following discussion under the Agriculture Resources section of the EIR: • Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project; • Impacts on any current and future agricultural operations in the vicinity; • Incremental impacts leading to cumulative impacts on agricultural land, including past, present, and likely future projects; and • Proposed mitigation measure for all impacted agricultural lands within the proposed project area.

TABLE 2-1: SUMMARY OF IS/NOP COMMENTS

Commenter/Date	Summary of Comment
Native American Heritage Commission (NAHC) September 24, 2019	The commenter states that the proposed project should comply with Senate Bill (SB) 18 and Assembly Bill (AB) 52, contact CA Native American Tribes and their representatives that are within the geographic area of the project and conduct consultations in accordance with SB 18 and AB 52, evaluate if the project will have an adverse impact on historical resources within the project area, contact appropriate regional archaeological information center for a record search, prepare an archaeological inventory survey (if required), contact the Native American Heritage Commission, and include mitigation measures for inadvertent discoveries of archaeological resources.
Local	
Antelope Valley-East Kern Water Agency (AVEK) October 8, 2019	The commenter states that their underground 36" CML&C Transmission Pipeline running East-West through eight easements owned by AVEK on the north side of Gaskell Road. The commenter is concerned for the protection of the pipeline as it crosses the proposed project's Tumbleweed Facility on Gaskell Road. They request additional information on how the project proponent will guarantee the protection of the pipe and ask to be contacted in order to discuss an agreement about crossing their easements. Additionally, they request that a proposed plan addressing these concerns be submitted to the Engineering Manager.
East Kern Air Pollution Control District September 10, 2019	The commenter acknowledges the receipt of the NOP.
Lahontan Regional Water Quality Control Board September 16, 2019	The commenter suggests the applicant consider LID alternatives including maintaining natural drainage paths, maintaining vegetated areas, etc., to develop a SWPPP that is applicable to solar fields, access roads, and gen-tie line, implement temporary BMPs until vegetation has been restored to pre-project conditions or permanent BMPs are in place, and identify post-construction storm water management BMPs including maintaining existing vegetation. Maintaining and mowing existing vegetation is recommended rather than clearing and grubbing. They also recommend the applicant delineate and evaluate impacts of the project on water of the State, list beneficial uses of surface water and groundwater in the project area, identify water quality objectives and standards for waters of the State, implement a Restoration and Revegetation Plan to summarize how water resource and upland areas will be restored to match pre-project condition, site equipment staging areas, soil stockpiles and hazardous materials in upland areas, and include a mitigation measure for a Spill Prevention and Response Plan. The commenter states the project has the potential to impact waters of the State, and required permits may include the following: • CWA Section 401 water quality certification for impact to federal waters; • CWA 402(p) storm water permit, which may include a NPDES General Construction Storm Water permit; and • NPDES General Industrial Storm Water Permit, WQO-2009-0009-DWQ.
Kern County Public Works – Floodplain Management September 17, 2019	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 Public Works Department. Per the Kern County Floodplain Management Ordinance, associated flood hazard requirements will need to be incorporated into the design of the project.

TABLE 2-1: SUMMARY OF IS/NOP COMMENTS

Commenter/Date	Summary of Comment
Kern County Public Works – Operations & Maintenance – Regulatory Monitoring & Reporting September 19, 2019	The commenter acknowledges the receipt of the NOP.
Kern County Public Works – Building and Development- Development Review September 17, 2019	The commenter acknowledges the receipt of the NOP.
Kern County Public Works – Building and Development- Survey September 13, 2019	The commenter acknowledges the receipt of the NOP.
Kern County Administrative Office September 16, 2019	The commenter acknowledges the receipt of the NOP.
Kern County Superintendent of Schools September 13, 2019	The commenter states that the proposed project would not result in a significant impact to schools or district facilities so long as statutory school facilities fees, if any, are collected, and no further mitigation measures regarding school facilities are necessary.
Kern County Public Health Services – Environmental Health October 11, 2019	An account on the California Environmental Report System should be made for the project.
Kern County Agriculture Department September 11, 2019	The commenter acknowledges the receipt of the NOP.
Kern County Parks and Recreation September 12, 2019	The commenter acknowledges the receipt of the NOP.
Kern County Library – Local History Room September 26, 2019	The commenter acknowledges the receipt of the NOP.
Kern County Library Director September 13, 2019	The commenter acknowledges the receipt of the NOP.

TABLE 2-1: SUMMARY OF IS/NOP COMMENTS

Commenter/Date	Summary of Comment
Interested Parties	
Southern California Gas Company (Distribution Department) October 30, 2019	There commenter states the Distribution Department of SoCalGas does not operate any facilities located within the project boundary. SoCalGas shall be notified if there are any transmission facilities within the project area.
Southern California Gas Company (Transmission Department) October 17, 2019	There commenter states the Transmission Department of SoCalGas does not operate any facilities located within the project boundary. The Transmission Department requested that the Distribution Department of SoCalGas be contacted to assure no conflict with their pipeline system. The Lead Agency subsequently contacted and received a response from the Distribution Department of SoCalGas, as described above in this table.
Audubon & Defenders of Wildlife October 10, 2019	The commenter recommends the following: • An analysis of the direct and indirect impacts of the project on Biological Resources including plants and animals, migratory pathways, wildlife corridors and wildlife connectivity; • Survey the area for roosting birds in the Joshua trees, which are used by Swainson's hawks and other birds of pretty for foraging platforms and for nesting. Since birds of prey have a 5-mile radius, trees within the 5-mile radius must be identified and evaluated; • Protocol level surveys for Burrowing owl as outlined in the March 7, 2012 document Staff Report on Burrowing Owl Mitigation, State of California, Natural Resources Agency, Department of Fish & Game; • Surveys and analysis of impacts on migratory birds, nests and eggs protected by the California Fish & Game Code and the Federal Migratory Bird Treaty Act; • Project Alternatives that avoid or minimize impacts to Biological Resources; and • Summarize data from another solar project of similar size regarding its operational impacts to biological resources.
Armando Mendoza September 17, 2019	The commenter expresses general opposition to the proposed project. Additionally, the commenter expresses concern for their property and suggests the project proponent purchase their land at market value.
David Karmann October 2, 2019	The commenter expresses concern for potential economic impacts of the proposed project and states that project implementation would result in decreased property values for their lots. Surrounding parcels. Additionally, the commenter suggests the project proponent purchase their land at market value.

2.4.3 Availability of the Draft EIR

This Draft EIR is being distributed directly to agencies, organizations, and interested groups and persons for comment during a 45-day formal review period in accordance with Section 15087 of the *CEQA Guidelines*. This Draft EIR and the full administrative record for the project, including all studies, is

available for review during normal business hours Monday through Friday at the Kern County Planning Department, located at:

Kern County Planning and Natural Resources Department
2700 "M" Street, Suite 100
Bakersfield, CA 93301-2370
Phone: (661) 862-8600, Fax: (661) 862-8601

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

Additionally, this EIR is available at the following libraries:

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

Kern County Library
Rosamond Branch
3611 Rosamond Boulevard
Rosamond, CA 93560

2.5 Format and Content

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

- 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 and Traffic;
- Tribal Cultural Resources;
- Utilities and Service Systems; and
- Wildfires.

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

- Population and Housing
- Recreation

The proposed project includes an approximate 1,000 square foot operations and maintenance (O&M) building located at each facility (Chaparral Solar Facility and Rabbitbrush Solar Facility) within the project site. The on-site construction workforce for the project is expected to peak at 946 individuals (or worker vehicles), however, the average daily workforce is expected to be 688 individuals on-site during construction. The operation and maintenance of the proposed project will require up to 20 full-time

equivalent (FTE) personnel (or personnel hours totaling 20 FTE positions). 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 employees were hired from out of the area and had to relocate to eastern Kern County, it is expected that housing would be available in the nearby hotels in Rosamond, Lancaster, Mojave, or other local communities and would not result in a substantial increase in population in the area. Consequently, this would represent a minor increase in the number of users at local recreational facilities. As a result, the project would not directly or indirectly induce the development of any new housing or businesses, and there would not be a detectable increase in the use of parks or other recreational facilities. No impacts to population and housing, or recreation, would occur and no further analysis is warranted.

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

2.5.1 Required EIR Content and Organization

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

TABLE 2-2: REQUIRED EIR CONTENTS

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

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

- Chapter 1, *Executive Summary*, provides a summary of the project description and a summary of the environmental impacts and mitigation measures.
- Chapter 2, *Introduction*, provides CEQA compliance information, an overview of the decision-making process, organization of the EIR, and a responsible and trustee agency list.
- Chapter 3, *Project Description*, provides a description of the location, characteristics, and objectives of the projects, and the relationship of the projects to other plans and policies associated with the project.
- Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, contains a detailed environmental analysis of the existing conditions, projects impacts, mitigation measures, and cumulative impacts.
- Chapter 5, *Consequences of Project Implementation*, presents an analysis of the project's cumulative and growth-inducing impacts and other CEQA requirements, including significant and unavoidable impacts and irreversible commitment of resources.
- Chapter 6, *Alternatives*, describes a reasonable range of alternatives to the projects that could reduce the significant environmental effects that cannot be avoided.
- Chapter 7, *Responses to Comments*, is reserved for responses to comments on the EIR.
- Chapter 8, *Organizations and Persons Consulted*, lists the organizations and persons contacted during preparation of this EIR.
- Chapter 9, *Preparers*, identifies persons involved in the preparation of the EIR.
- Chapter 10, *Bibliography*, identifies reference sources for the EIR.
- *Appendices* provide information and technical studies that support the environmental analysis contained within the EIR.

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

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

2.6 Responsible and Trustee Agencies

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

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

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

2.6.1 Federal Agencies

- United States Fish and Wildlife Service (USFWS)
- United States Environmental Protection Agency (EPA)
- Federal Aviation Administration (FAA)
- United States Army Corps of Engineers (USACOE)

2.6.2 State Agencies

- Governor's Office of Planning and Research (OPR)
- California Air Resources Board (CARB)
- California Energy Commission (CEC)
- California Public Utilities Commission (CPUC)
- California Department of Fish and Wildlife (CDFW)
- Lahontan Regional Water Quality Control Board (RWQCB)
- California Department of Transportation (Caltrans), District 9
- California Native American Heritage Commission (NAHC)

2.6.3 Regional Local Agencies

- Eastern Kern County Air Pollution Control District (EKAPCD)
- Kern Council of Governments (KCOG)

2.6.4 Kern County

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

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

2.7 Incorporation by Reference

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

2.7.1 Kern County General Plan

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

2.7.2 Willow Springs Specific Plan

The Willow Springs Specific Plan was drafted in 1992 for the unincorporated community of Willow Springs. The plan includes the following elements: land use, seismic/safety; circulation; housing; noise; and open space/conservation. Within each of these element categories, an existing setting, policies and implementation strategies for those policies are provided.

2.7.3 Kern County Zoning Ordinance

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

- Provide the economic and social advantages resulting from an orderly planned use of land resources;
- Encourage and guide development consistent with the Kern County General Plan;

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

2.7.4 Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern Council of Governments (COG), and was adopted on August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. California's Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, calls for the Kern RTP to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas (GHG) emissions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low income housing need and transportation planning.

2.7.5 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. As required by law, the following affected cities have adopted the ALUCP for their respective airports: Bakersfield, California City, Delano, Shafter, Taft, Tehachapi, and Wasco.

2.8 Sources

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

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Chapter 3
Project Description

3.1 Introduction

This Environmental Impact Report (EIR) has been prepared by Kern County (County), which is the CEQA Lead Agency, to identify and evaluate potential environmental impacts associated with implementation of the approximately 1,406-acre AVEP Solar Project (project) by Chaparral Solar, LLC and Rabbitbrush Solar, LLC (project proponents/operators). The project proposes to develop two photovoltaic (PV) solar facilities and associated infrastructure necessary to generate a combined total of approximately 250 megawatts (MW) of renewable electrical energy including an associated combined total of approximately 2,000 megawatt-hours (MWh) of energy storage systems on approximately 1,406 acres of privately owned land.

The proposed project consists of two sites: the 774-acre Chaparral Solar Facility and the 632-acre Rabbitbrush Solar Facility. Collectively, these sites are referred to as the project site. The proposed project would be built collectively at either the same time or alternatively as two approximately 125 MW facilities on the approximately 774-acre Chaparral site and 632-acre Rabbitbrush site, as commercial contracts are entered into for each. Depending upon market conditions, the Chaparral and Rabbitbrush facilities may also each include an energy storage system (ESS) with the capacity to store approximately 1,000 MWh of energy on each facility (for a combined project total of approximately 2,000 MWh). As proposed, each ESS would be located on 5 acres of land within the facility. Power generated by the proposed project would be transferred as follows, and as depicted on **Figure 3-10**, *Project Site Plan*.

Chaparral Site:

1. Via proposed 34.5kV collection lines to the approved Willow Springs Solar Project Substation (to be shared with Chaparral Solar), then
2. Via the existing 230kV gen-tie line constructed for the Willow Springs Solar Project (to be shared with Chaparral Solar), to the existing North Rosamond Solar Project substation (to be shared with Chaparral Solar and Rabbitbrush Solar), then
3. Via the existing 230kV gen-tie line constructed for the North Rosamond Solar Project and Willow Springs Solar Project (to be shared with Chaparral Solar and Rabbitbrush Solar), to the existing SCE Whirlwind Substation.

Rabbitbrush Site:

1. Via proposed 34.5kV collection lines to the existing North Rosamond Solar Project substation (to be shared with Chaparral Solar and Rabbitbrush Solar), then
2. Via the existing 230kV gen-tie line constructed for the North Rosamond Solar Project and Willow Springs Solar Project (to be shared with Chaparral Solar and Rabbitbrush Solar), to the existing SCE Whirlwind Substation.

The route for the proposed 34.5kV collection lines would traverse public access easements and County roads, and as such will require Franchise Agreement(s) with the County of Kern.

3.2 Project Location

The project site is located in southeastern Kern County, and is approximately 5.5 miles west of the unincorporated community of Rosamond (see **Figure 3-1**, *Site Vicinity*). The proposed project is in the eastern high desert region of unincorporated Kern County. More specifically, the project is in the western extent of the Mojave Desert near Mojave, California. It is generally bordered by Avenue of the Stars to the north, 100th Street West and a transmission line easement utilized by the Los Angeles Department of Water and Power to the east, Rosamond Boulevard to the south, and 130th Street West to the west. The site is located within portions of Section 18 of Township 9 North, Range 13 West, San Bernardino Base and Meridian (SBBM), and within portions of Sections 9, 10, 12, 13, 14 15, and 23 of Township 9 North, Range 14 West, SBBM.

Land uses in the region include a mix of undeveloped land, agriculture, residential, recreational and public facilities, and renewable energy projects (solar and wind). Desert vegetation dominates the proposed project site and region. Topography across the proposed project sites is relatively flat. The major north-south route in the region is State Route 14, a four-lane highway located approximately 8 miles east of the proposed project. The major east-west route near the proposed project is State Route 58, a four-lane highway located approximately 13.5 miles north of the proposed project. Other roads serving the project include Rosamond Boulevard, 110th Street West, 120th Street West, and 130th Street West. Paved and unpaved roadways generally following section lines are found throughout the area.

The Assessor Parcel Numbers (APNs) are summarized in **Table 3-1**, *Project Assessor Parcel Numbers (APNs) – Specific Plan Map Code Designations and Zone Districts – AVEP Solar Project*, below. **Figure 3-2**, *Project Boundary*, depicts the project boundaries.

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 350 (2015), which requires that 50 percent of all electricity sold in the State to be generated from renewable energy sources by the year 2020. As further required by the State *CEQA Guidelines*, the specific objectives of the project are provided below:

- Develop a Solar PV power generating project in order to assist the State of California in achieving the Renewable Portfolio Standard obligations and Senate Bill 350 and California Global Warming Solutions Act (AB 32) greenhouse gas reduction goals by providing a significant new source of renewable energy;
- Produce and transmit electricity at a competitive cost;
- Locate generating facilities in a rural portion of southeastern Kern County which receives intense solar radiation and is in proximity to an available interconnection to the existing or permitted electrical transmission system;

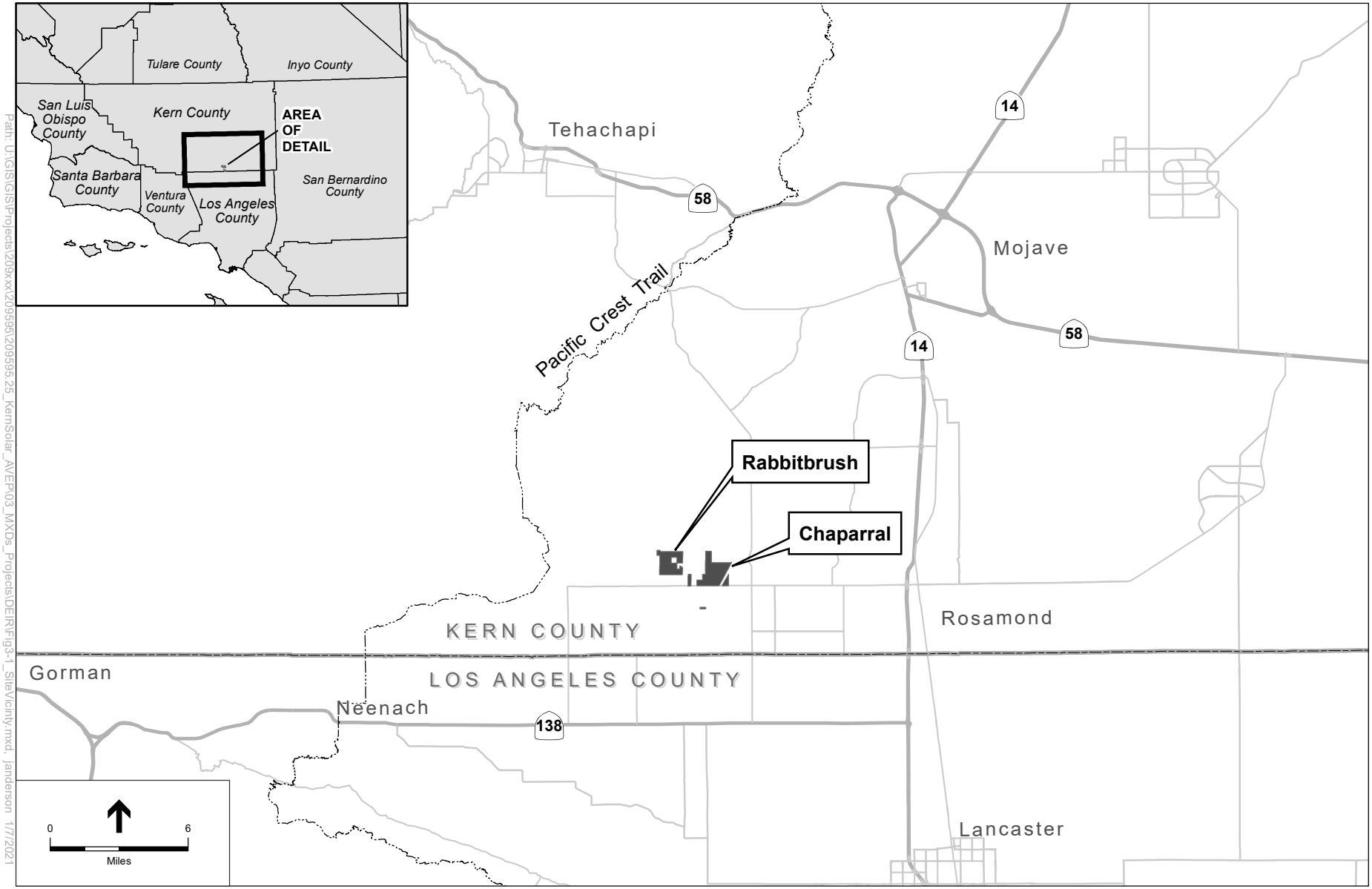

Figure 3-1: SITE VICINITY

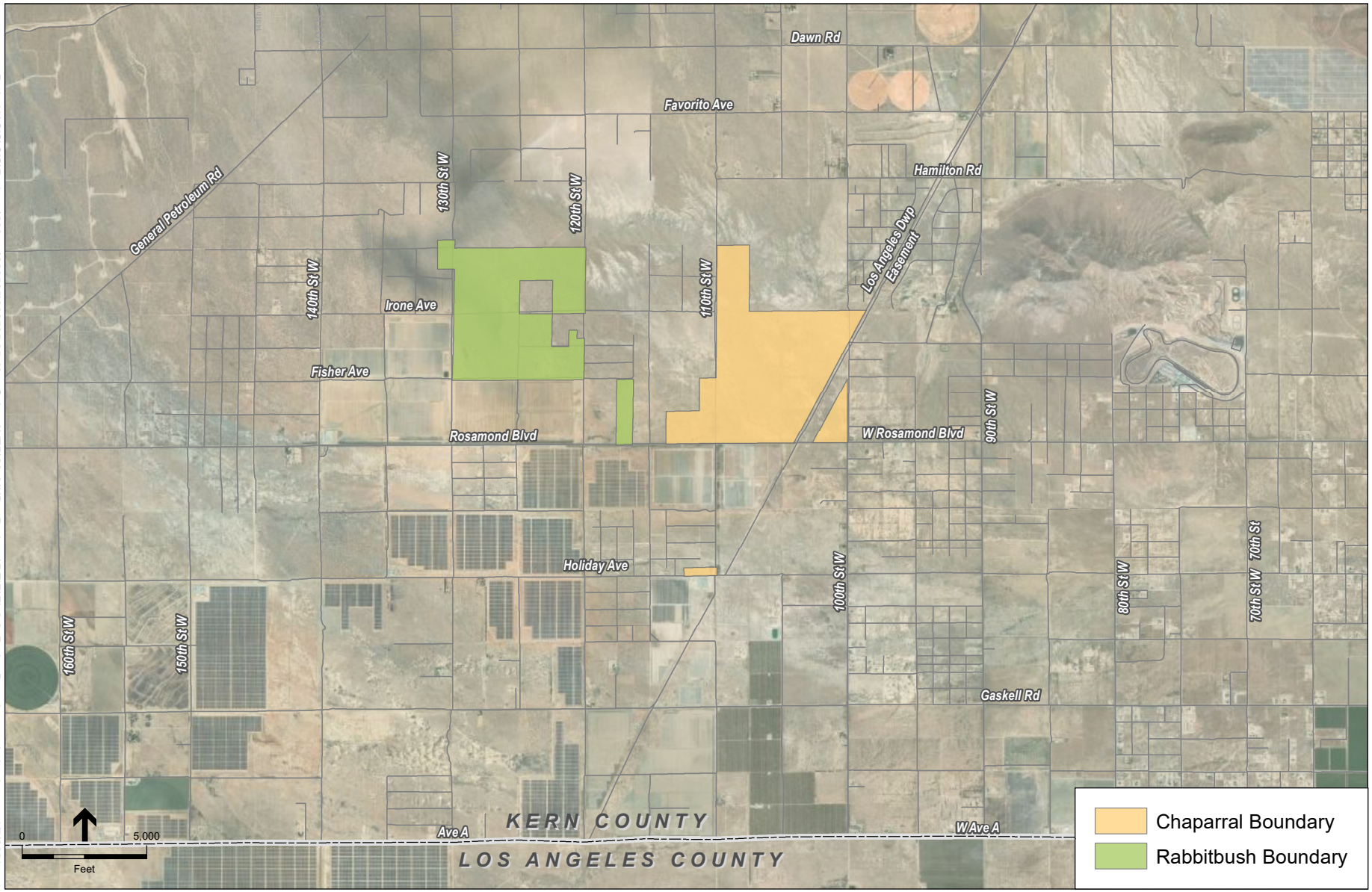

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Figure 3-2: PROJECT BOUNDARY

TABLE 3-1: PROJECT ASSESSOR PARCEL NUMBERS (APNS) – SPECIFIC PLAN MAP CODE DESIGNATIONS AND ZONE DISTRICTS – AVEP SOLAR PROJECT

Solar Facility Site	APN	Willow Springs Specific Plan- Existing Map Code Designation(s)	Willow Springs Specific Plan- Proposed Map Code Designation(s)	Existing Zone District(s)	Proposed Zone Districts	Acres
Chaparral Site	358-030-07	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40
	358-030-08	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40
	358-030-09	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	41
	358-030-10	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40
	358-030-11	5.3/4.4	5.3	A FPS	A FPS	38
	358-030-12	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-14	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-15	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-16	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-17	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-19	5.3/4.4	5.3	A FPS	A FPS	40
	358-030-22	5.3/4.4	5.3	A FPS	A FPS	26
	358-030-23	5.3/4.4	5.3	A FPS	A FPS	41
	358-030-24	5.3/4.4	5.3	A FPS	A FPS	41
	358-152-25	5.3/4.4	5.3	A FPS, E(2½) RS FPS	A FPS	40
	358-152-26	5.6	5.6	E(2½) RS FPS	A FPS	10
	358-152-27	5.6	5.6	E(2½) RS FPS	A FPS	10
	358-030-30	6.2	6.2	E(2½) RS FPS	A FPS	10
	358-030-33	6.2	6.2	E(2½) RS FPS	A FPS	32
	358-152-39	5.6	5.6	E(2½) RS FPS	A FPS	10
	358-152-40	5.6	5.6	E(2½) RS FPS	A FPS	10
	358-390-09	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40

TABLE 3-1: PROJECT ASSESSOR PARCEL NUMBERS (APNS) – SPECIFIC PLAN MAP CODE DESIGNATIONS AND ZONE DISTRICTS – AVEP SOLAR PROJECT

Solar Facility Site	APN	Willow Springs Specific Plan- Existing Map Code Designation(s)	Willow Springs Specific Plan- Proposed Map Code Designation(s)	Existing Zone District(s)	Proposed Zone Districts	Acres
	358-390-16	5.3/4.4, 5.3/4.4/2.1	5.3, 5.3/2.1	A FPS, A GH FPS	A FPS, A GH FPS	40
	252-341-48 (a portion thereof)	5.3/4.4	5.3	E(2½) RS FPS	A FPS	10
	359-011-36	5.6	5.6	E(2½) RS FPS	A FPS	10
					Total Chaparral Site Acreage	**774**
Rabbitbrush Site	358-010-04	5.7, 8.5	5.7/8.5	E(5) RS FPS, A FPS	A FPS	40
	358-010-13	8.5	8.5	A FPS	A FPS	80
	358-010-14	8.5	8.5	A FPS	A FPS	80
	358-010-17	8.5	8.5	A FPS	A FPS	20
	358-010-18	8.5	8.5	A FPS	A FPS	20
	358-010-19	8.5	8.5	A FPS	A FPS	40
	358-030-05	8.5	8.5	A FPS	A FPS	40
	358-030-06	8.5	8.5	A FPS	A FPS	40
	358-030-26	8.5	8.5	A FPS	A FPS	20
	358-030-27	8.5	8.5	A FPS	A FPS	20
	358-030-28	8.5	8.5	A FPS	A FPS	20
	358-030-29	8.5	8.5	A FPS	A FPS	20
	358-141-34	5.75	5.75	E(10) RS FPS	A FPS	5
	358-152-03	5.6	5.6	E(2½) RS FPS	A FPS	21
	358-152-54	5.6	5.6	E(2½) RS FPS	A FPS	3
	358-152-55	5.6	5.6	E(2½) RS FPS	A FPS	3
	358-152-56	5.6	5.6	E(2½) RS FPS	A FPS	3
	358-152-57	5.6	5.6	E(2½) RS FPS	A FPS	3
	358-152-58	5.6	5.6	E(2½) RS FPS	A FPS	11

TABLE 3-1: PROJECT ASSESSOR PARCEL NUMBERS (APNS) – SPECIFIC PLAN MAP CODE DESIGNATIONS AND ZONE DISTRICTS – AVEP SOLAR PROJECT

Solar Facility Site	APN	Willow Springs Specific Plan- Existing Map Code Designation(s)	Willow Springs Specific Plan- Proposed Map Code Designation(s)	Existing Zone District(s)	Proposed Zone Districts	Acres
	358-160-01	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-02	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-07	5.3/4.4	5.3	E(5) RS FPS	A FPS	20
	358-160-08	5.3/4.4	5.3	E(5) RS FPS	A FPS	20
	358-160-09	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-10	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-13	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-14	5.6	5.6	E(5) RS FPS	A FPS	10
	358-160-21	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-24	5.6	5.6	E(5) RS FPS	A FPS	5
	358-160-25	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-26	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-27	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-29	5.6	5.6	E(5) RS FPS	A FPS	3
	358-160-30	5.6	5.6	E(5) RS FPS	A FPS	5
	358-160-31	5.6	5.6	E(5) RS FPS	A FPS	5
	358-360-04	5.75	5.75	E(10) RS FPS	A FPS	10
	358-360-05	5.75	5.75	E(10) RS FPS	A FPS	3
					Rabbitbrush Site Total Acreage	**632**
					Proposed Solar Project Total Acreage	**1,406**

TABLE 3-1: PROJECT ASSESSOR PARCEL NUMBERS (APNS) – SPECIFIC PLAN MAP CODE DESIGNATIONS AND ZONE DISTRICTS – AVEP SOLAR PROJECT

Solar Facility Site	APN	Willow Springs Specific Plan- Existing Map Code Designation(s)	Willow Springs Specific Plan- Proposed Map Code Designation(s)	Existing Zone District(s)	Proposed Zone Districts	Acres
LEGEND						
2.1 = Seismic Hazard Overlay 4.4 = Comprehensive Planning Area 5.3 = Maximum 10 units/net acre 5.6 = Minimum 2.5 gross acres/unit 5.7 = Minimum 5 gross acres/unit 5.75 = Minimum 10 gross acres/unit 6.2 = General Commercial 8.1 = Intensive Agriculture (Minimum 20-acre parcel size) 8.5 = Resources Management (Minimum 20-acre parcel size) 2.1 = Seismic Hazard Overlay 4.4 = Comprehensive Planning Area A = Exclusive Agriculture E(2½) = Estate 2½ Acres E (5) = Estate 5 Acres E (10) = Estate 10 Acres FPS = Floodplain Secondary Combining GH = Geologic Hazard Combining RS = Residential Suburban Combining						

- Minimize environmental impacts by:
  - Using existing electrical transmission facilities, rights-of-way, roads, and other existing infrastructure where practicable;
  - Minimizing water use; and
  - Reducing greenhouse gas emissions
- Use technology that is available, proven, efficient, easily maintained and environmentally sound;
- Assist the County in continuing the goal in the Energy Element of its General Plan to develop large scale solar energy development as a major energy source in the County;
- Contribute to County goal of increasing renewable energy storage; and
- Develop a commercially financeable renewable energy project.

3.4 Project Background

The project proponents filed the initial discretionary land use applications (including Conditional Use Permit applications) for the project in February 2018, and those applications were deemed complete by the County in August 2018. In the original conditional use permit applications, the project proponents had proposed the development of three solar facilities which, in addition to the Chaparral Solar Facility and Rabbitbrush Solar Facility, included a third solar generating facility and energy storage system located on approximately 721 acres of land and referred to as the Tumbleweed Solar Facility.

The County circulated the Notice of Preparation/Initial Study (NOP/IS) for the project from September 10, 2019, to October 10, 2019, which included the Tumbleweed Solar Facility. Subsequent to the circulation of the NOP/IS, the project proponents undertook a redesign process for the project that resulted in the removal of the Tumbleweed Solar Facility and withdrawal of the corresponding discretionary land use applications for that facility. This revision reduced the project energy output from 375 MW to 250 MW and decreased the land area from approximately 2,117 acres to 1,406 acres as reflected in this EIR.

3.5 Environmental Setting

The proposed project is located on approximately 1,406 acres of undeveloped (with the exception of two residences and residential accessory structures), privately owned land located in the western extent of the Mojave Desert, approximately 5.5 miles west of the unincorporated community of Rosamond, California. The proposed project is in the Mojave Basin and Range ecoregion and the Willow Springs and Little Buttes United States Geological Survey (USGS) 7.5-minute topographical quadrangles. Development in the area surrounding the project sites includes rural residences, agriculture, as well as renewable energy (solar and wind) facilities.

The Mojave Creosote Bush Scrub community dominate most of the proposed project sites. This community typically occurs on well-drained soils in alluvial fans, bajadas, and upland slopes. Growth occurs during spring (or rarely in summer or fall) if rainfall is sufficient. This is one of the most widely distributed desert plant communities in the Mojave Desert, occurring from the desert floor up to approximately 3,500 feet in elevation and extending into northwestern Arizona and southern Utah. Scattered, widely spaced Joshua trees occur throughout portions of the creosote bush scrub communities present within the project site; however, they do not occur at a density high enough to consider them a distinct woodland community.

The foothills of the Tehachapi Range occur approximately 4.5 miles north of the proposed project, and the Central Transverse Range occurs approximately 15 miles south of the site. The proposed project and surrounding land are mostly flat and exhibit little topographic variation.

The proposed project is located within unincorporated Kern County and is currently designated as Willow Springs Specific Plan map codes:

- 5.3/4.4 (Maximum 10 units/net acre/ Comprehensive Planning Area)
- 5.3/4.4/2.1 (Maximum 10 units/net acre/ Comprehensive Planning Area/ Seismic Hazard)
- 5.6 (Minimum 2.5 gross acres/unit)
- 5.7 (Minimum 5 gross acres/unit)
- 5.75 (Minimum 10 gross acres/unit)
- 6.2 (General Commercial)
- 8.5 (Resources Management [Minimum 20-acre parcel size])

Existing development in the area includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, and wind and solar energy. A portion of the Pacific Crest Trail (PCT) is approximately 4.5 miles west of the project site.

There are several planned, existing, and permitted solar energy and transmission projects in the region where the project site is located. Surrounding solar projects in the vicinity include:

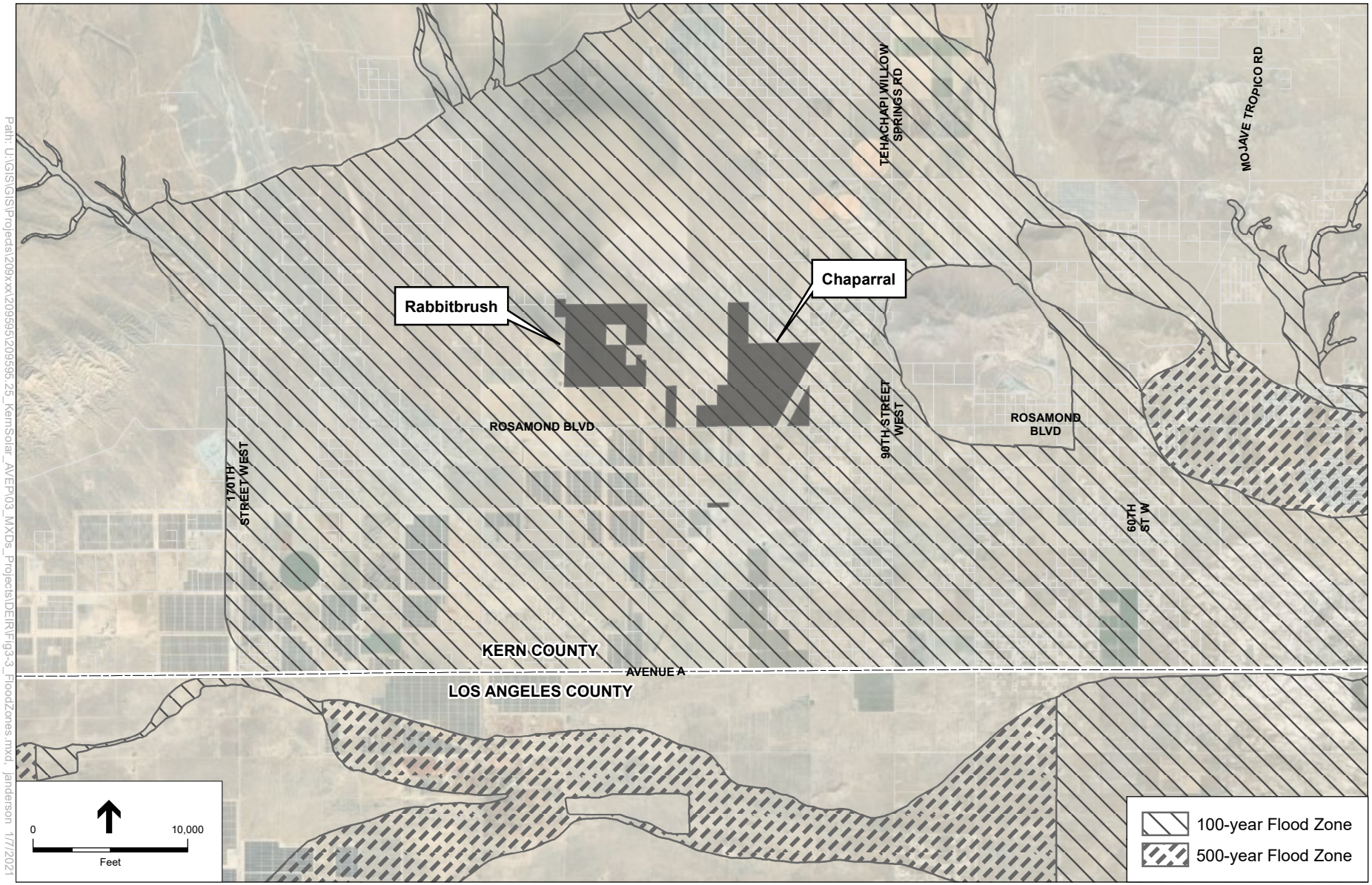
- The Antelope Valley Solar Project: abutting a portion of the Rabbitbrush facility on the south side of Rosamond Boulevard, approved in 2010, and currently operational.
- Catalina Renewable Energy Project: approximately 2.5 miles north of the Rabbitbrush facility, approved in 2011, and currently operational.
- Rosamond Solar Project: approximately 2 miles southwest of the Rabbitbrush facility, approved in 2010, and currently operational.
- North Rosamond Solar Project: abutting a portion of the Chaparral facility and the Rabbitbrush facility, approved in 2014, and currently operational.
- Willow Springs Solar Project: abutting a portion of the Chaparral facility, approved in 2016. Phase 1 is operational, and Phase 2 is under construction.

There are several existing and permitted solar energy, wind energy, and transmission projects in the region where the project site is located. An expanded list of existing, approved and pending projects in the vicinity of the project is provided at the end of this chapter in **Table 3-4**, *Cumulative Projects List*.

The proposed project is located entirely within a Federal Emergency Management Agency (FEMA) designated Flood Zone, as depicted in **Figure 3-3**, *Flood Zone Map*. The entirety of the two facilities are located within mapped Zone A (100-year) flood hazard area on FEMA's Flood Insurance Rate Maps (FIRM) (Wallace Group, 2019). There are several drainage routes on the proposed project sites. All drainage routes are isolated episodic or ephemeral waters, which typically only flow for brief periods in response to rainfall.

Based on a review of records maintained by the California Department of Conservation (DOC), California Department of Conservation, Geologic Energy Management Division (CalGEM) [formerly Division of Oil, Gas and Geothermal Resources (DOGGR)], wells were not identified on the proposed project sites, and the proposed project is not within the jurisdictional boundaries of an oilfield (CalGEM, 2020).

The proposed project would be served by the Kern County Sheriff's Office for law enforcement and public safety. The closest sheriff station is the Rosamond Station, located approximately 6.5 miles east of the project, at 3179 35th Street West in Rosamond. The Kern County Fire Department (KCFD) provides fire protection and emergency medical and rescue services for the project area. The closest KCFD fire station is located approximately 6.5 miles east of the project at 3219 35th Street West in Rosamond. The closest school is Tropico Middle School, located approximately 4.5 miles east of the project. The nearest hospital is the Adventist Health Tehachapi Valley Hospital, located approximately 18 miles to the northwest in Tehachapi.



Path: U:\GIS\GIS\Projects\209xxx\209595\209595.25_KernSolar_AVEP\03_MXDs_Projects\DEIR\Fig3-3_FloodZones.mxd, janderson 1/7/2021

Figure 3-3: FLOOD ZONE MAP

The nearest airports to the project sites are the privately owned Rosamond Skypark approximately 5.5 miles to the east, Lloyd's Landing approximately 2 miles to the northeast, the Mojave Air and Space Port approximately 15 miles to the northeast, and the Mountain Valley Airport (a private airport which allows private access) approximately 15 miles to the north. None of the project site or associated infrastructure, including gen-tie lines, is located within any airport influence area.

According to the DOC 2018 Farmland Mapping and Monitoring Program designations, the proposed project is designated "Nonagricultural and Natural Vegetation" and "Semi-Agricultural and Rural Commercial Land" (DOC 2018c). Parcels within the project boundary and in the vicinity are not subject to a Williamson Act Land Use contract.

3.6 Land Use and Zoning

Willow Springs Specific Plan Map Code Designations and Zone Districts

The existing and proposed Willow Springs Specific Plan map code designations are shown in **Figure 3-4**, *Existing Willow Springs Specific Plan Designations*, and **Figure 3-5**, *Proposed Willow Springs Specific Plan Designations*, respectively. The existing and proposed Zone Districts are shown in **Figure 3-6**, *Existing Zoning*, and **Figure 3-7**, *Proposed Zoning*, respectively.

Kern County Zoning Ordinance

The existing land uses of the project and its surroundings are listed in **Table 3-2**, *Project Sites and Surrounding Land Uses*, below.

The entire project is also subject to the provisions of the Kern County Zoning Ordinance and is zoned as specified in **Table 3-1**, *Project Assessor Parcel Numbers (APNs) – Specific Plan Map Code Designations and Zone Districts – AVEP Solar Project*, and depicted in **Figure 3-6**, *Existing Zoning*, and **Figure 3-7**, *Proposed Zoning*. **Figure 3-8a**, *Amendment to Willow Springs Specific Plan Circulation Plan, Chaparral Site*, and **Figure 3-8b**, *Amendment to Willow Springs Specific Plan Circulation Plan, Rabbitbrush Site*, shows those future road reservations proposed to be eliminated, as requested by SPA 2, Map 231-18; SPA 26, Map 232; and SPA 28, Map 232. The project proponents also requested two Nonsummary Vacations to request vacation of public access easement(s), as shown on **Figure 3-9a**, *Proposed Nonsummary Vacation of Public Access Easements, Chaparral Site*, **Figure 3-9b**, *Proposed Nonsummary Vacation of Public Access Easements, Rabbitbrush Site (page 1 of 2)*, and **Figure 3-9b**, *Proposed Nonsummary Vacation of Public Access Easements, Rabbitbrush Site (page 2 of 2)*.

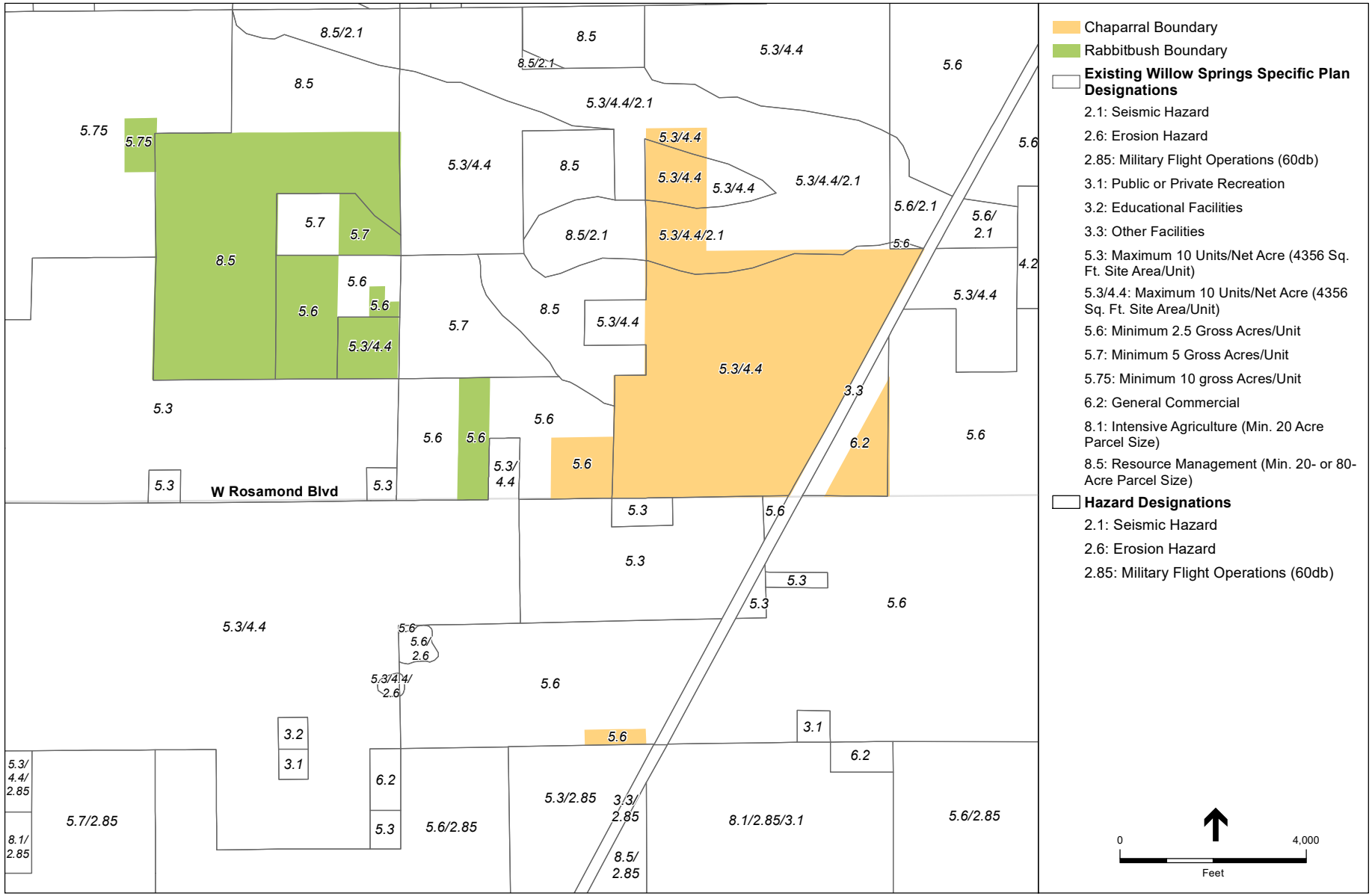


Figure 3-4: EXISTING WILLOW SPRINGS SPECIFIC PLAN DESIGNATIONS

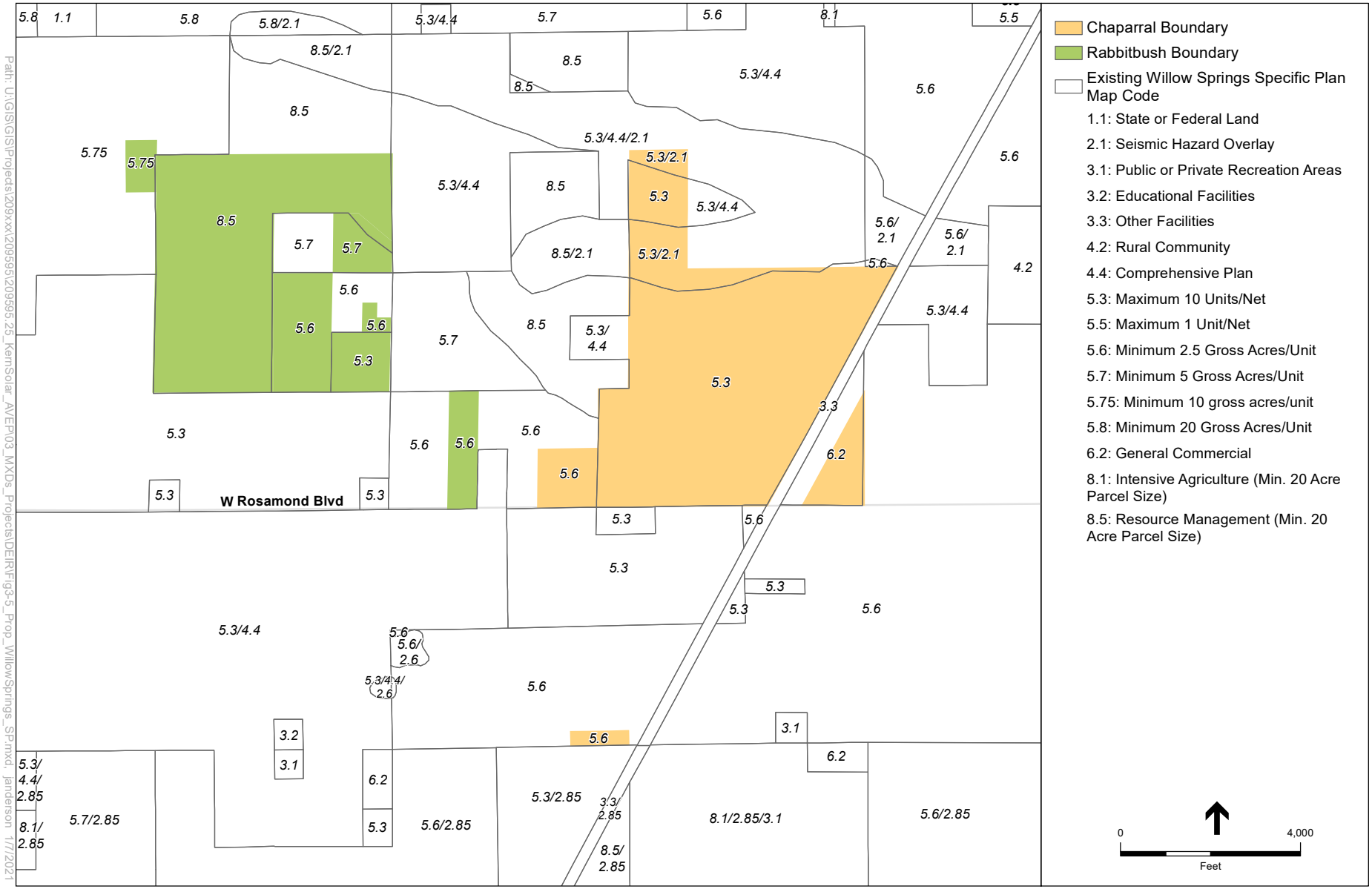


Figure 3-5: PROPOSED WILLOW SPRINGS SPECIFIC PLAN DESIGNATIONS

TABLE 3-2: PROJECT SITES AND SURROUNDING LAND USES

	Existing Land Use	Existing Map Code Designation	Existing Zoning Classification
Chaparral Facility Site	Undeveloped, residential dwelling	3.3, 5.3/4.4, 5.3/4.4/2.1, 5.6, 6.2	A FPS, A GH FPS, E(2½) RS FPS
North	Undeveloped	3.3, 5.3/4.4, 5.3/4.4/2.1, 5.6/2.1	A FPS, E (2½) RS FPS, A GH FPS
South	Solar facility, undeveloped	3.3, 5.3, 5.6	A FPS, E (2½) RS FPS
East	Undeveloped, sparse residential dwellings	3.3, 5.3/4.4, 5.6	A FPS, A GH FPS, E (2½) RS FPS. E (2½) RS FPS,
West	Undeveloped	3.3, 5.3/4.4, 5.3/4.4/2.1, 5.6, 8.5, 8.5/2.1	A FPS, A GH FPS, E (2½) RS FPS
Rabbitbrush Facility Site	Undeveloped, residential dwellings	5.3/4.4, 5.6, 5.7, 5.75, 8.5	A FPS, E (2½) RS FPS, E (5) RS FPS, E (10) RS FPS
North	Undeveloped	5.6, 5.7, 5.75, 8.5	A FPS, E (5) RS FPS, , E (10) RS FPS
South	Solar facility	5.3, 5.3/4.4, 5.75	A FPS, E (1) MH FPS, E (10) RS FPS
East	Undeveloped, sparse residential dwellings	5.3/4.4, 5.6, 5.7	E (2½) RS FPS, E (5) RS FPS, A FPS
West	Undeveloped, sparse residential dwellings, solar facility	5.3, 5.6, 5.75	A FPS, E (2½) RS FPS, E (10) RS FPS

LEGEND

1 = Seismic Hazard Overlay
3.3 = Other Facilities
4.4 = Comprehensive Planning Area
5.3 = Maximum 10 units/net acre
5.6 = Minimum 2.5 gross acres/unit
5.7 = Minimum 5 gross acres/unit
5.75 = Minimum 10 gross acres/unit
6.2 = General Commercial
8.5 = Resources Management (Minimum 20-acre parcel size)
A = Exclusive Agriculture
E (2½) = Estate 2½ acres
E (5) = Estate 5 acres
E (10) = Estate 10 acres
FPS = Floodplain Secondary Combining
GH = Geologic Hazard Combining
RS = Residential Suburban Combining

SOURCE: Kern County, 2020

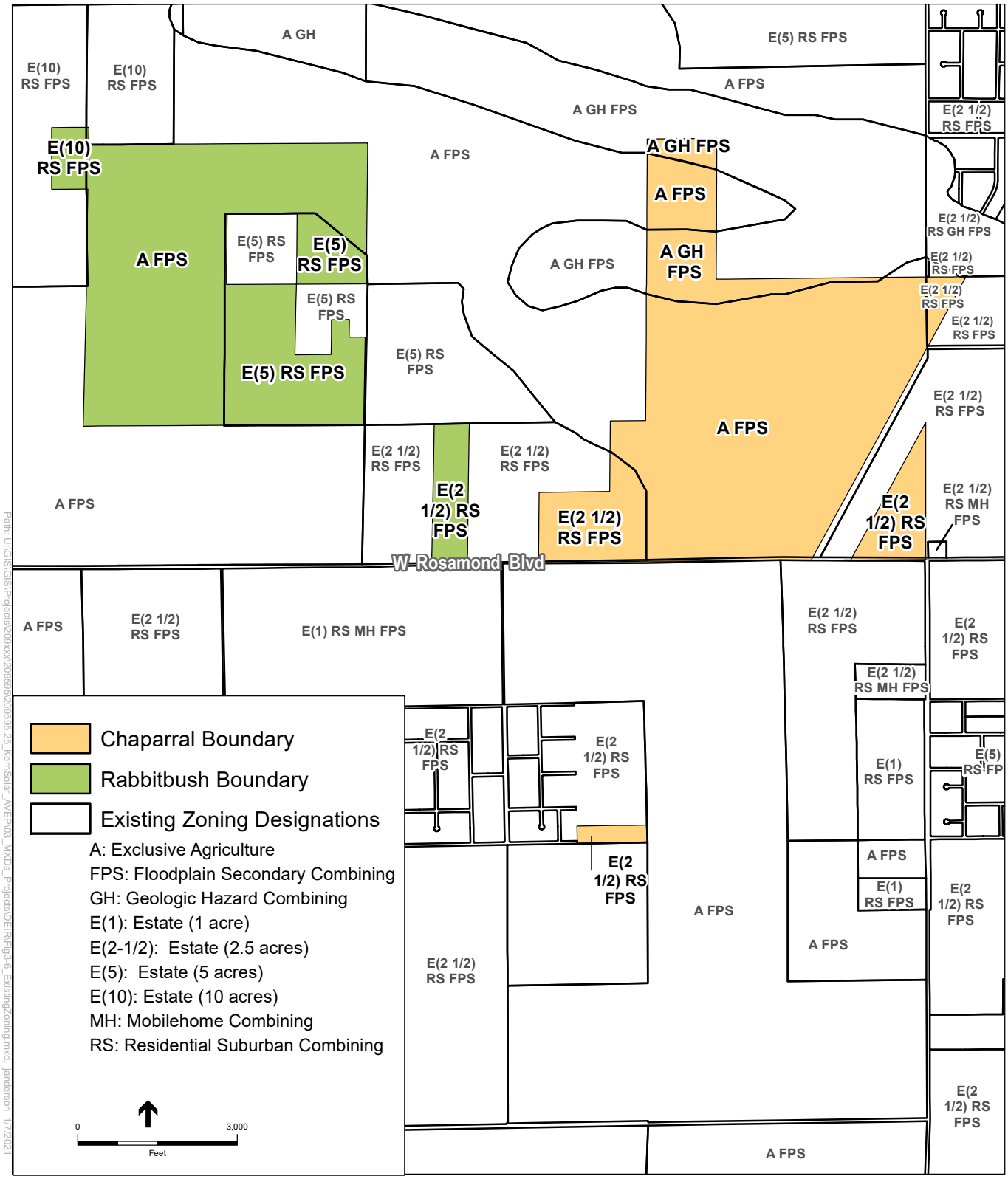


Figure 3-6: EXISTING ZONING

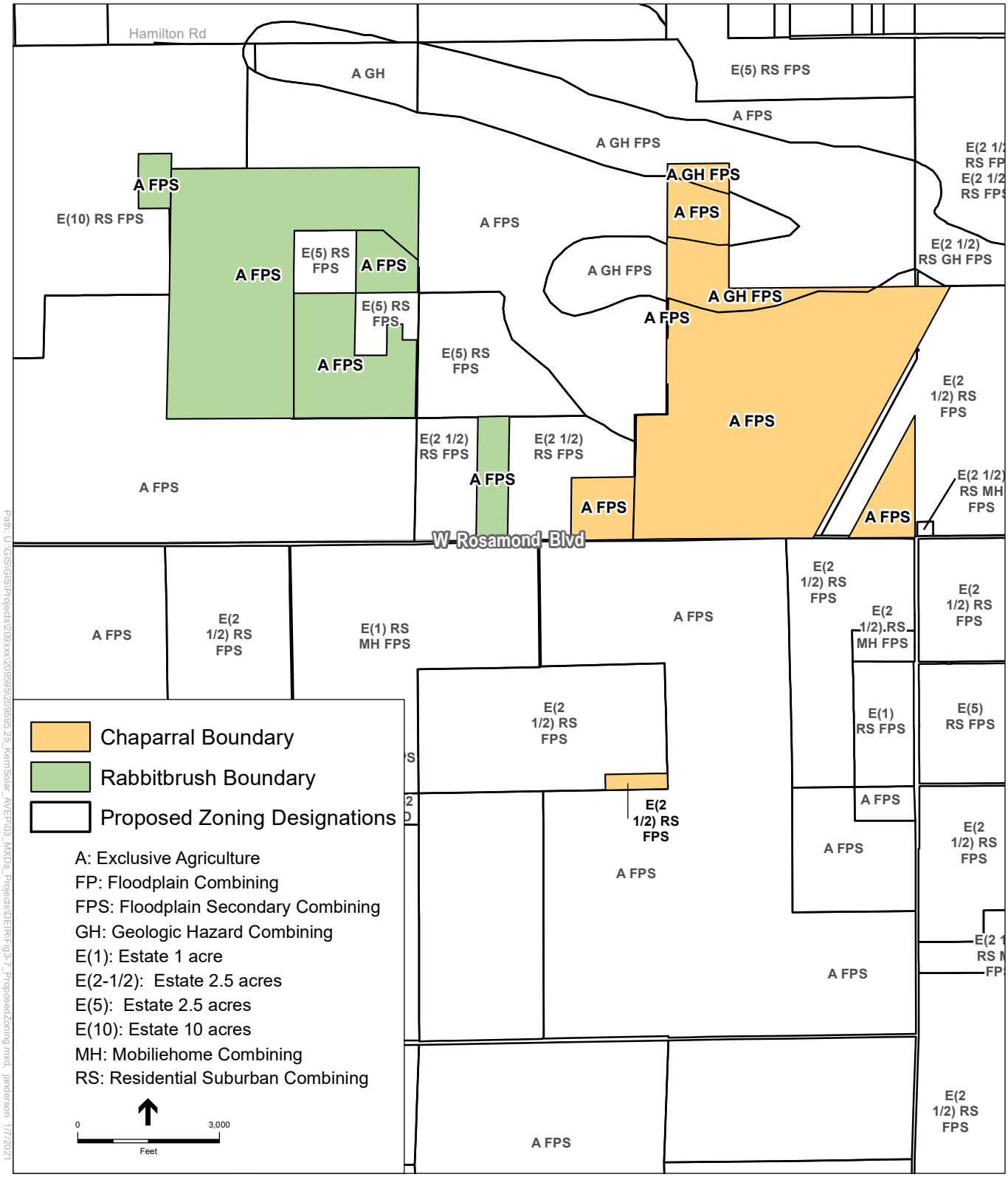


Figure 3-7: PROPOSED ZONING

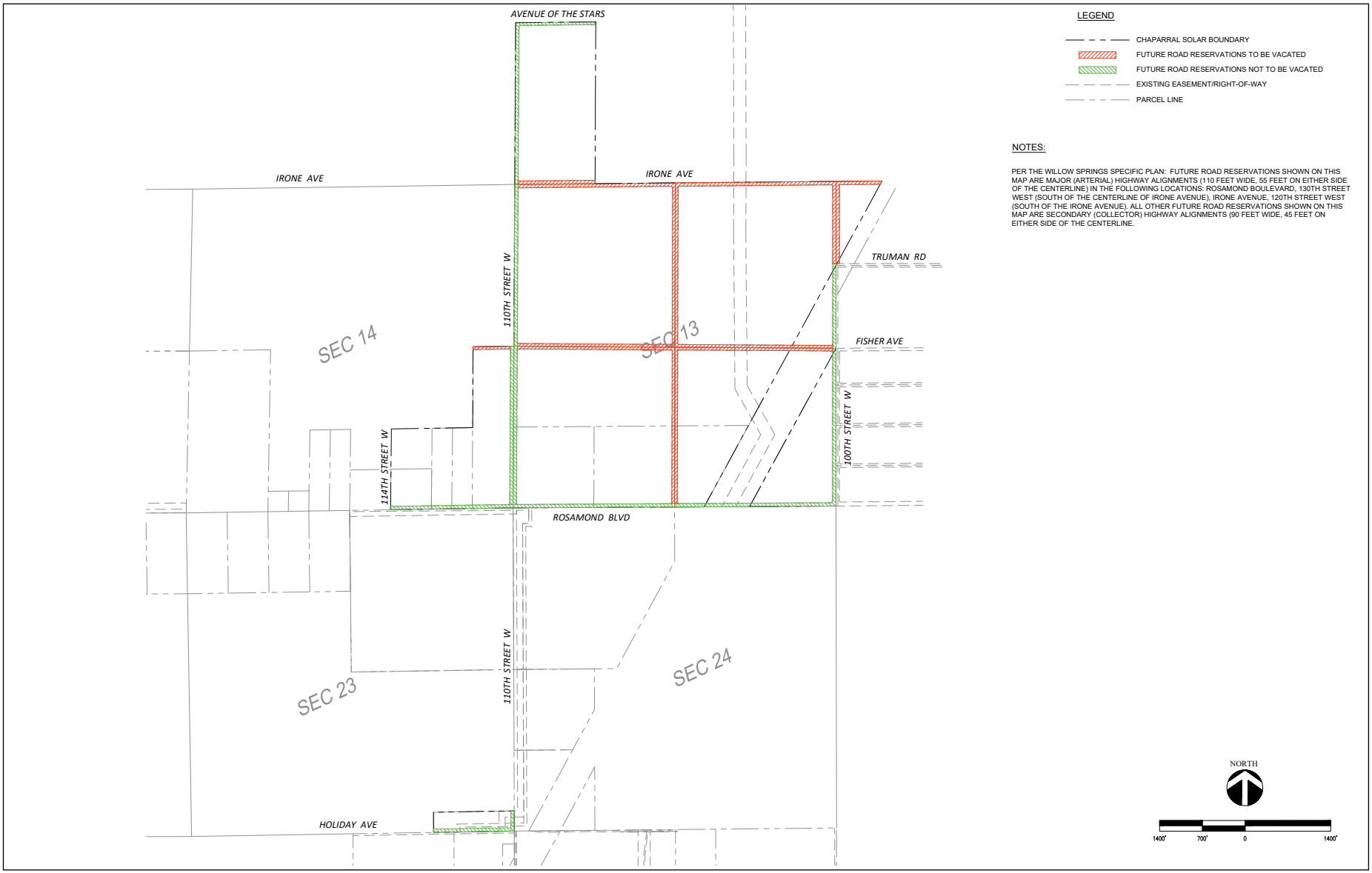


Figure 3-8a: AMENDMENT TO WILLOW SPRINGS SPECIFIC PLAN CIRCULATION PLAN, CHAPARRAL SITE

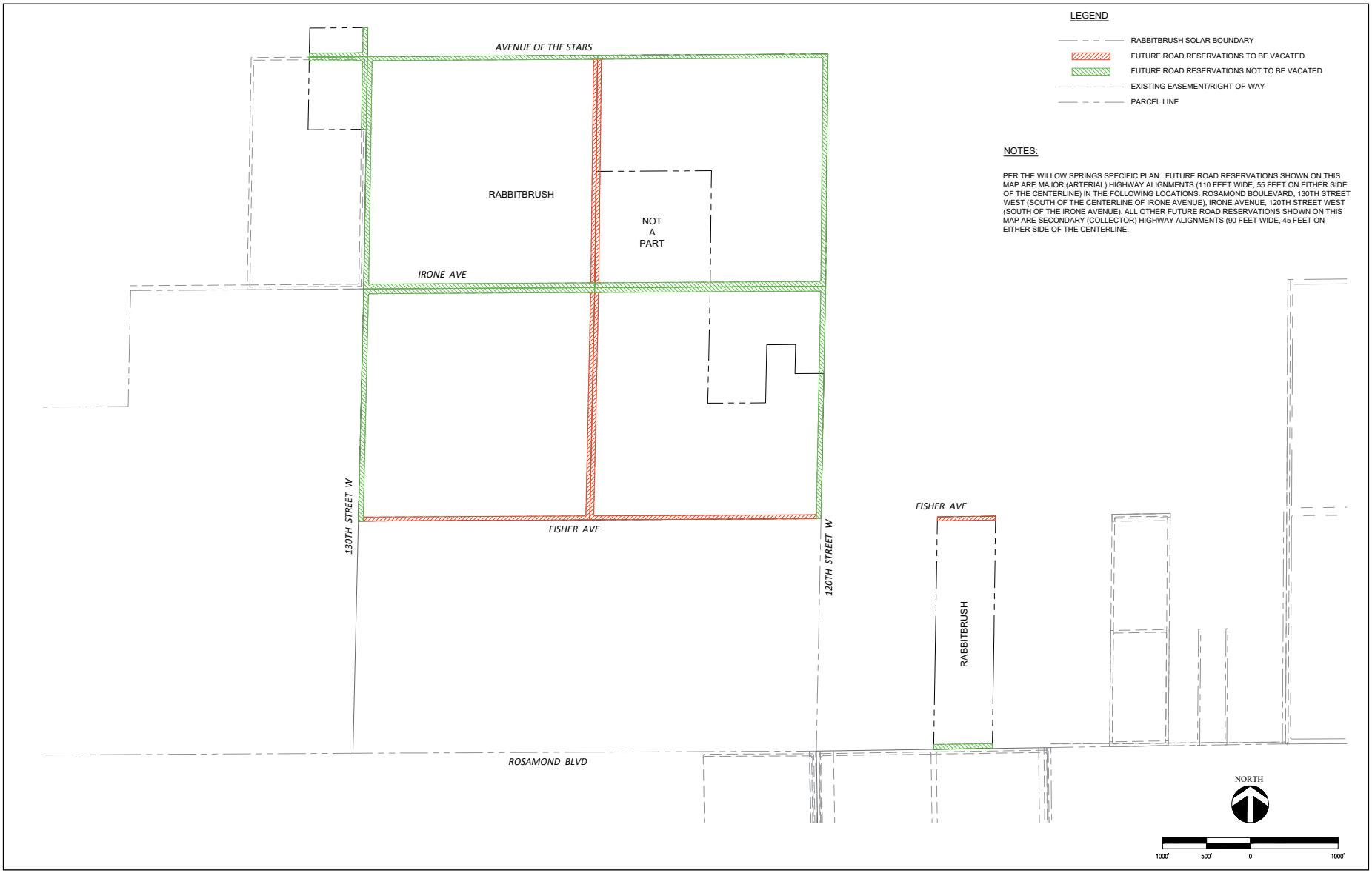


Figure 3-8b: AMENDMENT TO WILLOW SPRINGS SPECIFIC PLAN CIRCULATION PLAN, RABBITBRUSH SITE

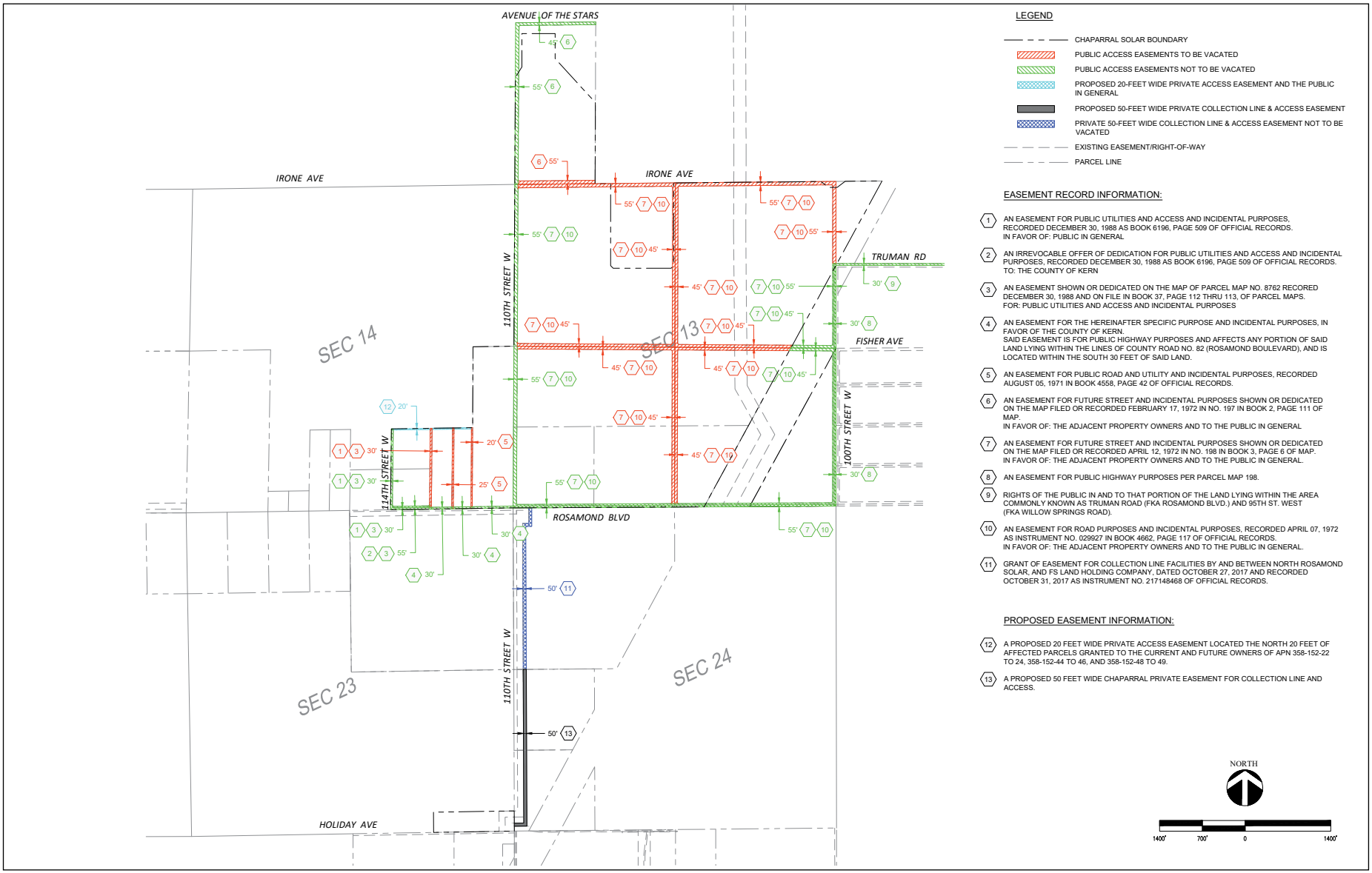


Figure 3-9a: PROPOSED NONSUMMARY VACATION OF PUBLIC ACCESS EASEMENTS, CHAPARRAL SITE

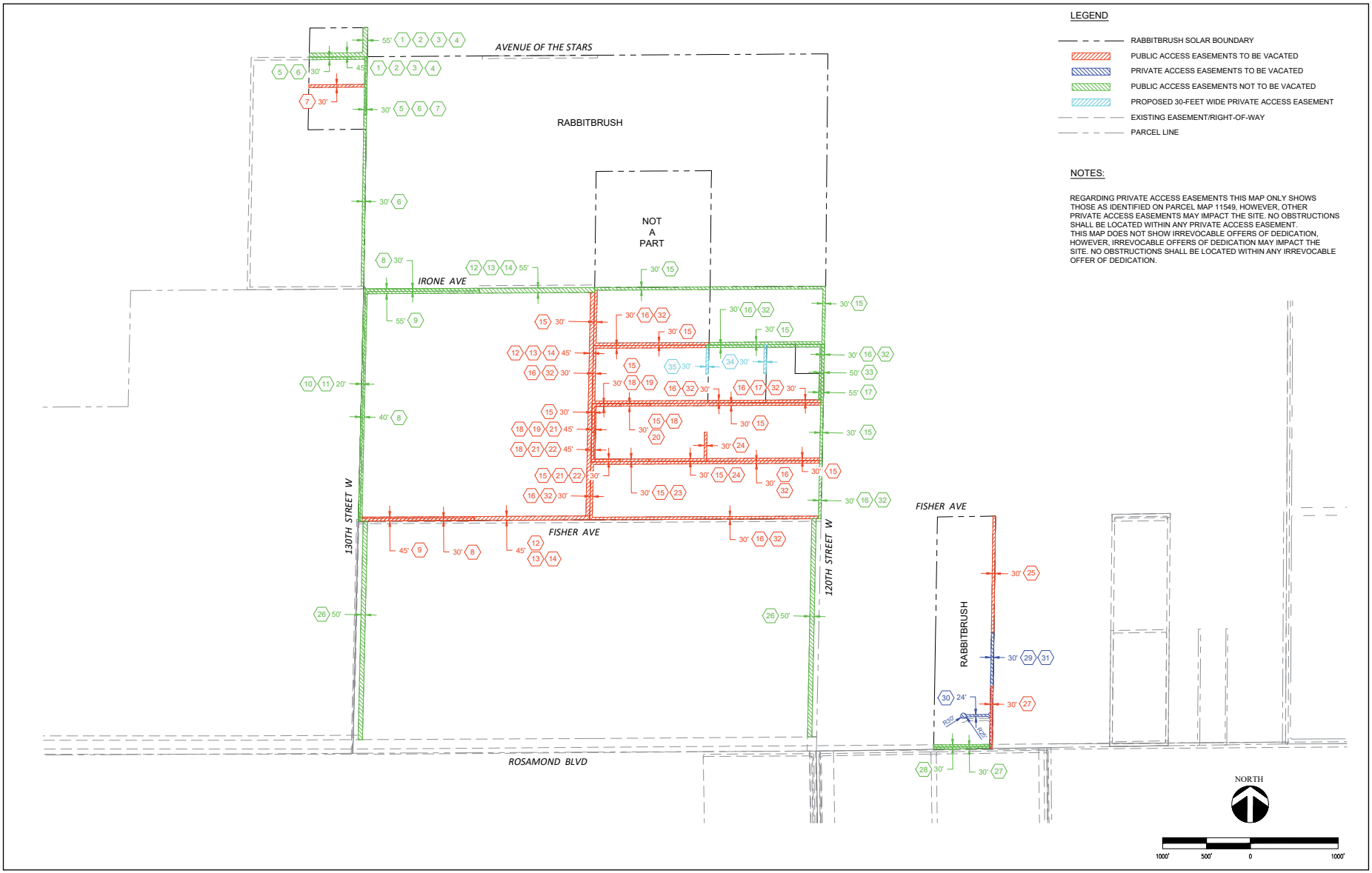


Figure 3-9b: PROPOSED NONSUMMARY VACATION OF PUBLIC ACCESS EASEMENTS, RABBITBRUSH SITE (PAGE 1 OF 2)

EASEMENT RECORD INFORMATION:

1. AN EASEMENT FOR PUBLIC ROAD, INGRESS AND EGRESS AND PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED APRIL 10, 1972 IN BOOK 4662, PAGE 164 OF OFFICIAL RECORDS. IN FAVOR OF: CENTURY WESTERN CORPORATION, A CORPORATION.

2. AN EASEMENT SHOWN OR DEDICATED ON THE MAP OF NO. 3107 RECORDED DECEMBER 11, 1975 AND ON FILE IN BOOK 14, PAGE 198, OF PARCEL MAPS. FOR: ROAD AND INCIDENTAL PURPOSES.

3. AN EASEMENT FOR INGRESS, EGRESS, ROAD AND INCIDENTAL PURPOSES, RECORDED SEPTEMBER 19, 1975 IN BOOK 4915, PAGE 1028 OF OFFICIAL RECORDS. IN FAVOR OF: THE PUBLIC IN GENERAL

4. AN IRREVOCABLE OFFER OF DEDICATION FOR ROAD AND INCIDENTAL PURPOSES, RECORDED SEPTEMBER 19, 1975 IN BOOK 4915, PAGE 1028 OF OFFICIAL RECORDS. TO: COUNTY OF KERN

5. AN EASEMENT FOR ROAD AND PUBLIC UTILITY AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED FEBRUARY 27, 1959 IN BOOK 3090, PAGE 207 OF OFFICIAL RECORDS.

6. AN EASEMENT FOR PUBLIC ROAD, UTILITY AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 27, 1959 IN BOOK 3089, PAGE 548 AND RECORDED FEBRUARY 27, 1959 IN BOOK 3090, PAGE 207, BOTH OF OFFICIAL RECORDS. IN FAVOR OF: HAZEL V. ROUGH, A WIDOW, AND EVA H. BERTRAM, A MARRIED WOMAN

7. AN EASEMENT FOR ROAD AND PUBLIC UTILITY AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED MAY 05, 1965 IN BOOK 3837, PAGE 410 OF OFFICIAL RECORDS.

8. AN EASEMENT FOR INGRESS, EGRESS, ROAD PURPOSES AND INCIDENTAL PURPOSES, RECORDED DECEMBER 07, 1990 IN BOOK 6462, PAGE 2356 OF OFFICIAL RECORDS. IN FAVOR OF: PUBLIC IN GENERAL

9. AN IRREVOCABLE OFFER OF DEDICATION FOR INGRESS, EGRESS, ROAD PURPOSES AND INCIDENTAL PURPOSES, RECORDED DECEMBER 07, 1990 IN BOOK 6462, PAGE 2356 OF OFFICIAL RECORDS. TO: COUNTY OF KERN

10. AN EASEMENT FOR INGRESS, EGRESS AND ROAD PURPOSES AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 14, 1989 IN BOOK 6208, PAGE 2374 OF OFFICIAL RECORDS. IN FAVOR OF: PUBLIC IN GENERAL

11. AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, RECORDED MAY 11, 1989 IN BOOK 6238, PAGE 320 OF OFFICIAL RECORDS. IN FAVOR OF: PACIFIC BELL, A CORPORATION

12. AN EASEMENT FOR INGRESS, EGRESS AND ROAD PURPOSES AND INCIDENTAL PURPOSES, RECORDED APRIL 09, 1976 IN BOOK 4949, PAGE 1533 OF OFFICIAL RECORDS. IN FAVOR OF: ADJACENT PROPERTY OWNERS AND TO THE PUBLIC IN GENERAL

13. AN IRREVOCABLE OFFER OF DEDICATION FOR ROAD AND INCIDENTAL PURPOSES, RECORDED APRIL 09, 1976 IN BOOK 4949, PAGE 1533 OF OFFICIAL RECORDS. TO: THE COUNTY OF KERN

14. AN EASEMENT FOR INGRESS, EGRESS, ROAD AND INCIDENTAL PURPOSES, RECORDED APRIL 09, 1976 IN BOOK 4949, PAGE 1533 OF OFFICIAL RECORDS. IN FAVOR OF: THE ADJACENT PROPERTY OWNERS AND TO THE PUBLIC IN GENERAL

15. AN EASEMENT FOR ROAD AND PUBLIC UTILITY PURPOSES AND INCIDENTAL PURPOSES, RECORDED AUGUST 19, 1958 AS INSTRUMENT NO. 46019 IN BOOK 2994, PAGE 492 OF OFFICIAL RECORDS. IN FAVOR OF: SYDNEY H. WILDE AND EDITH WILDE, HIS WIFE

16. AN EASEMENT FOR ROAD AND PUBLIC UTILITY AND INCIDENTAL PURPOSES, RECORDED AUGUST 19, 1958 IN BOOK 2994, PAGE 488 OF OFFICIAL RECORDS. IN FAVOR OF: SYDNEY H. WILDE AND EDITH WILDE

17. AN EASEMENT FOR PUBLIC ROAD, INGRESS AND EGRESS AND PUBLIC UTILITY AND INCIDENTAL PURPOSES, RECORDED MARCH 15, 1971 IN BOOK 4501, PAGE 463 OF OFFICIAL RECORDS. IN FAVOR OF: RICHARD G. AINLEY AND MARTHA EVELYN AINLEY, HUSBAND AND WIFE

18. AN EASEMENT FOR ROAD, INGRESS AND EGRESS AND PUBLIC UTILITIES PURPOSES, TO BE USED IN COMMON WITH OTHERS AND INCIDENTAL PURPOSES, RECORDED MARCH 30, 1967 IN BOOK 4038, PAGE 749 OF OFFICIAL RECORDS. IN FAVOR OF: CENTURY WESTERN CORPORATION, A CORPORATION

19. AN EASEMENT FOR PUBLIC ROAD, INGRESS AND EGRESS AND PUBLIC UTILITIES PURPOSES, TO BE USED IN COMMON WITH OTHERS WITH THE RIGHT TO DEDICATE FOR PUBLIC ROADS AND HIGHWAY PURPOSES AND INCIDENTAL PURPOSES, RECORDED JANUARY 22, 1980 AS INSTRUMENT NO. 006706 IN BOOK 5259, PAGE 1682 OF OFFICIAL RECORDS. IN FAVOR OF: JONATHON S. VORDERMARK AND JEFFIE CANNON VORDERMARK, HUSBAND AND WIFE

20. AN EASEMENT FOR PUBLIC ROAD, INGRESS AND EGRESS AND PUBLIC UTILITIES PURPOSES, TO BE USED IN COMMON WITH OTHERS WITH THE RIGHT TO DEDICATE FOR PUBLIC ROADS AND HIGHWAY PURPOSES AND INCIDENTAL PURPOSES, RECORDED SEPTEMBER 25, 1979 AS INSTRUMENT NO. 032362 IN BOOK 5231, PAGE 405 OF OFFICIAL RECORDS. IN FAVOR OF: JONATHON S. VORDERMARK AND JEFFIE CANNON VORDERMARK, HUSBAND AND WIFE

21. AN EASEMENT FOR PUBLIC ROAD, INGRESS AND EGRESS AND PUBLIC UTILITIES PURPOSES, TO BE USED IN COMMON WITH OTHERS AND INCIDENTAL PURPOSES, RECORDED AUGUST 16, 1978 AS INSTRUMENT NO. 015589 IN BOOK 5132, PAGE 922 OF OFFICIAL RECORDS. IN FAVOR OF: JONATHON S. VORDERMARK AND JEFFIE CANNON VORDERMARK, HUSBAND AND WIFE

22. AN EASEMENT FOR PUBLIC ROAD, INGRESS AND EGRESS AND PUBLIC UTILITIES PURPOSES AND INCIDENTAL PURPOSES, RECORDED JANUARY 07, 1980 AS INSTRUMENT NO. 001555 IN BOOK 5256, PAGE 781 OF OFFICIAL RECORDS. IN FAVOR OF: LYLE O. TISDEL AND MARY TISDEL, HUSBAND AND WIFE

23. AN EASEMENT FOR PUBLIC ROAD, INGRESS AND EGRESS AND PUBLIC UTILITIES PURPOSES, TO BE USED IN COMMON WITH OTHERS WITH THE RIGHT TO DEDICATE FOR PUBLIC ROADS AND HIGHWAY PURPOSES AND INCIDENTAL PURPOSES, RECORDED NOVEMBER 16, 1978 AS INSTRUMENT NO. 050471 IN BOOK 5155, PAGE 1308 OF OFFICIAL RECORDS. IN FAVOR OF: JONATHON S. VORDERMARK AND JEFFIE CANNON VORDERMARK, HUSBAND AND WIFE

24. AN EASEMENT FOR INGRESS, EGRESS, PUBLIC ROAD AND PUBLIC UTILITY AND INCIDENTAL PURPOSES, RECORDED AUGUST 09, 1983 IN BOOK 5577, PAGE 1821 OF OFFICIAL RECORDS. IN FAVOR OF: JACK D. HANSFORD AND MARJORIE HANSFORD, HUSBAND AND WIFE

25. AN EASEMENT FOR INGRESS AND EGRESS, PUBLIC UTILITY AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 11, 1966 IN BOOK 3918, PAGE 238 OF OFFICIAL RECORDS. IN FAVOR OF: CHARLES T. WILLMARTH

26. AN EASEMENT FOR COLLECTION LINE AND ACCESS PURPOSES, RECORDED OCTOBER 31, 2017 PER DOCUMENT NO. 217148469 OF OFFICIAL RECORDS. IN FAVOR OF: R-WS ANTELOPE VALLEY GEN-TIE, LLC

27. A 30-FOOT WIDE PUBLIC ACCESS EASEMENT PER PARCEL MAP 11549.

28. A 30-FOOT WIDE PUBLIC HIGHWAY EASEMENT PER VOLUME 4, PAGE 912 OF MINUTES.

29. A 30-FOOT WIDE EASEMENT RESERVED UNTO CHARLES T. WILLMARTH FOR ROAD AND UTILITY PURPOSES PER BOOK 3451, PAGE 306 OF OFFICIAL RECORDS.

30. A 24-FOOT WIDE PRIVATE ACCESS EASEMENT PER DOCUMENT NO. 210048515 OF OFFICIAL RECORDS.

31. AN EASEMENT FOR ROAD AND UTILITY PURPOSES AND INCIDENTAL PURPOSES, RECORDED JULY 25, 2005 AS INSTRUMENT NO. 0205193802 OF OFFICIAL RECORDS. IN FAVOR OF: MARIAN C. CALLAHAN, A WIDOW

32. AN EASEMENT FOR ROAD AND UTILITY AND INCIDENTAL PURPOSES, RECORDED OCTOBER 28, 1958 IN BOOK 3027, PAGE 273 OF OFFICIAL RECORDS. IN FAVOR OF: EDWARD W. BERTRAM, A MARRIED MAN, AS HIS SOLE AND SEPARATE PROPERTY

33. AN EASEMENT FOR ROAD AND UTILITY AND INCIDENTAL PURPOSES, RECORDED JUNE 16, 1966 IN BOOK 3955, PAGE 984 OF OFFICIAL RECORDS. IN FAVOR OF: CENTURY WESTERN CORPORATION

PROPOSED EASEMENT INFORMATION:

34. A PROPOSED 30 FEET WIDE PRIVATE ACCESS EASEMENT LOCATED EAST OF AFFECTED PARCEL. IN FAVOR OF: THE CURRENT AND FUTURE OWNERS OF APN 358-160-37

35. A PROPOSED 30 FEET WIDE PRIVATE ACCESS EASEMENT LOCATED EAST OF AFFECTED PARCEL. IN FAVOR OF: THE CURRENT AND FUTURE OWNERS OF APN 358-160-32

Figure 3-9b: PROPOSED NONSUMMARY VACATION OF PUBLIC ACCESS EASEMENTS, RABBITBRUSH SITE (PAGE 2 OF 2)

3.7 Project Characteristics

The proposed project would utilize high-efficiency commercially available solar PV modules that are Underwriters Laboratory (UL) listed or approved by another nationally recognized testing laboratory. Materials commonly used for solar PV modules include monocrystalline silicon, polycrystalline silicon, amorphous silicon, cadmium telluride (CdTe), and copper indium selenide/sulfide. The Applicants are considering using First Solar's proprietary thin film solar PV modules. The principal materials incorporated into the PV modules include glass, steel, and various semiconductor metals, including CdTe.

The proposed project would consist of solar arrays mounted either on fixed-tilt systems, horizontal tracker systems, or a combination thereof, and be mounted to vertical posts. The proposed facility is intended to operate year-round and would generate electricity during daylight hours when electricity demand is at its peak.

The proposed project would consist of two PV solar facilities and associated infrastructure necessary to generate a total of approximately 250-MW (approximately 125 MW per each facility) of renewable electrical energy on 1,406 acres of privately owned land in the eastern high desert region of unincorporated Kern County.

The AVEP Solar Project requests approval of the following applications by the County (acreages are approximate):

1. Chaparral Solar facility (by Chaparral Solar, LLC):
   - SPA 1, Map 231-18 (Specific Plan Amendment from 5.3/4.4 to 5.3). 10 acres.
   - SPA 25, Map 232 (Specific Plan Amendment from 5.3/4.4 to 5.3, and from 5.3/4.4/2.1 to 5.3/2.1). 672 acres.
   - ZCC 3, Map 231-18 (Zone Change from (E 2 1/2) RS FPS to A FPS). 10 acres.
   - ZCC 40, Map 232 (Zone Change from (E 2 1/2) RS FPS to A FPS). 120 acres
   - SPA 26, Map 232 (eliminate future road reservations)
   - SPA 2, Map 231-18 (eliminate future road reservations)
   - CUP 1, Map 231-18 (solar facility). 10 acres.
   - CUP 33, Map 232 (solar facility). 764 acres.
   - CUP 34, Map 232 (communication tower)
   - SPA 26, Map 232 (eliminate future road reservations)
   - SPA 2, Map 231 -18 (eliminate future road reservations)
   - Nonsummary Vacation, Map 232 (Vacation of public access easement(s)). 32 acres
2. Rabbitbrush Solar facility (by Rabbitbrush Solar, LLC):
   - SPA 27, Map 232 (Specific Plan Amendment from 5.3/4.4, to 5.3). 40 acres
   - ZCC 41, Map 232 (Zone Change from E (2½) RS FPS, E (5) RS FPS and E (10) RS FPS to be re-zoned A FPS). 222 acres.
   - CUP 35, Map 232 (solar facility). 632 acres.
   - CUP 36, Map 232 (communication tower)

- SPA 28, Map 232 (eliminate future road reservations)
- Nonsummary Vacation, Map 232 (Vacation of public access easement(s)). 9 acres

The power generated by the proposed project would be sold to California investor-owned utilities, California Community Choice Aggregators (CCAs), or other power off taker(s) in the furtherance of the goals of the California Renewable Energy Portfolio Standard and other similar renewable programs in the state. The project proponents may eventually choose to decommission and remove all or none of the systems from the proposed project sites. If either facility (Chaparral or Rabbitbrush) is decommissioned, it would be converted to another use consistent with the applicable land use regulations in effect at that time.

The combined project facilities would include the following components:

- Installation of a total of approximately 250 MW of solar PV modules, mounted either on fixed-tilt systems, horizontal tracker systems, or a combination thereof. The mounting system for the modules will be supported by steel posts driven into the ground;
- Diesel or battery powered backup generators as required by applicable County or local codes for emergency onsite backup power during project operations for stowing the trackers, or to maintain critical electronic equipment that is used for operation of the plant;
- Underground and above ground medium voltage collections systems, both on-site and off-site;
- Inverters and medium voltage transformers (also referred to as medium voltage step-up transformers);
- Installation of one or more additional transformers and associated equipment at two existing offsite solar project substations, i.e., the North Rosamond Solar Project Substation for use in conjunction with the Rabbitbrush facility, and Willow Springs Solar Project Substation for use in conjunction with the Chaparral facility;
- SCE improvements made at the SCE Whirlwind substation for the solar facilities to interconnect;
- On-site access roads;
- Perimeter security fencing which would be six feet high and topped with three strands of barbed wire, for a total height of seven feet;
- Concrete pads sized and installed to accommodate the associated equipment (inverters, switchgear, transformers, etc.);
- Meteorological data collection systems;
- Up to two unmanned Operations and Maintenance (O&M) Building(s);
- Up to two 5-acre energy storage systems and associated appurtenances;
- Telecommunication equipment including underground and overhead telephone, fiber optics and wireless communications infrastructure such as cell, satellite, or microwave towers (for which CUP applications have been submitted (CUP 34, Map 232 and CUP 36, Map 232). As previously indicated, there would be a maximum of two such communications towers (one on each of two solar facilities). This equipment will be both on-site and off-site. Regarding off-site telecommunication infrastructure, the project proponent expects to share existing wired or wireless telecommunications facilities with the North Rosamond Solar Project and the Willow Springs Solar Project from a local service provider; in the event that these facilities are not sufficiently available in the site vicinity, the project proponent may install hard-wired (land-line) systems, underground or on overhead lines;

- Proposed and/or existing water well(s) on each individual facility site and/or well(s) shared by one or more of the two facilities;
- Pipeline(s), should water to the project site be supplied from a water well located on the Willow Springs Solar Project. Such pipeline(s) may be used during the construction, operational and decommissioning phases of the proposed project; and
- The following potential stormwater and water storage-related components (the location and number of which will be determined during detailed design engineering in accordance with applicable building codes):
  - Retention pond(s). Such retention pond(s) would be unlined. The only water entering retention pond(s) would be stormwater. Other than evaporation, water will only exit the retention pond(s) by seeping into the ground. Retention pond(s) may contain stormwater throughout the year.
  - Detention pond(s). The only difference between detention pond(s) and retention pond(s) is the amount of time which stormwater would remain contained (i.e., retention pond(s) may contain stormwater throughout the year, while detention pond(s) would only hold water for a short period of time before it seeps into the ground).
  - Drainage channel(s). These channel(s) will convey stormwater to the aforementioned on-site water feature(s) (i.e., retention pond(s) and/or detention pond(s)).
  - Temporary lined basin(s). These basin(s) would only be present during the construction phase of the proposed project. These basin(s) will be backfilled at the conclusion of the construction phase of the proposed project. Water in these basin(s) will come from well(s) and will be conveyed via pipeline(s). Other than evaporation, water exiting these basin(s) will (after potentially being piped to tank(s) on the project site) be loaded onto trucks and delivered as necessary on the project site (i.e., for site preparation, dust control).

Solar PV Panels

Solar energy would be captured by PV panels. Based on current technology, it is estimated that the proposed project would include approximately 625,000 modules.

- The Chaparral Facility would have an estimated 312,500 modules;
- Rabbitbrush Facility would have an estimated 312,500 modules;

However, the number of modules installed will account for future technological improvements.

Solar Trackers

The PV module rows would be oriented north-to-south if single-axis trackers are used. The maximum height of the single-axis tracker solar panels would be 13 feet above grade (typically the panels would be at the maximum height of 13 feet above grade at the beginning and end of each day, however it could be lower depending on the angle of the sun and post height as determined during final engineering design). A solar tracking mechanism is used to maximize the solar energy conversion efficiency by keeping the modules perpendicular to the sun's energy rays throughout the day. This completed assembly of PV modules mounted on a framework structure is called a "tracker" because it tracks the sun from east to west. If used, single-axis trackers would increase the efficiency of energy production from the arrays relative to a fixed tilt system. The exact tracker manufacturer and model would be determined in the final design. All trackers are intended to function identically in terms of following the motion of the sun.

Module layout and spacing is optimized to balance energy production versus peak capacity and would depend on the sun angles and shading caused by the horizon surrounding the project. The spacing between the rows of trackers is dependent on site-specific features and would be identified in the final design. The final configuration would allow for sufficient clearance for maintenance vehicles and panel access.

Fixed Tilt Racking System

If the fixed tilt racking system is used, the solar panels would be in a fixed tilt position that allows for the most sunlight specific to the geography of the project. The PV modules would have a maximum height of 13 feet above grade.

Electrical Collector System and Inverters

Each facility will have a collection system connecting PV modules to the substation which includes a combination of underground, aboveground cable trays and overhead (poles or H-Frame structures) DC and AC electrical and communication cables. DC electrical collection lines would connect the PV modules to the inverter. Inverters will convert the DC power into low voltage AC power within the power conversion station (PCS) unit. Transformers within the PCS unit will then increase the AC power from low voltage to medium voltage (MV). MV AC electrical lines will connect onsite MV transformers to the offsite high voltage (HV) transformer(s) in the substations which will be utilized in conjunction with the proposed project (i.e., North Rosamond Solar Project Substation and Willow Springs Solar Project Substation). PV combining switchgear (PVCS), Sectionalizing Cabinets (SC) or other electrical combiner boxes may be installed to combine electrical lines on the collection system. The overhead collection system may contain single or multiple three phase electrical circuits and communication lines on the same structures. Overhead collection systems typically consist of wood or steel poles on monopoles or H-Frame structures. The collection system structures are proposed to have a maximum height of 75 feet, but may vary based on voltage, minimum height to avoid shading over modules, ground elevation, crossing of existing or proposed facilities, National Electric Safety code and right-of-way requirements.

Energy Storage System

As proposed, the proposed project would have up to two Energy Storage Systems (ESS) (one on each facility site) encompassing 5 acres per facility. The Chaparral Solar ESS has two potential location options, which are dependent on final design. Refer to **Figure 3-13**, *Collection Line and Gen-Tie Map*, for the potential location options on the Chaparral Solar Facility site, and refer to **Figure 3-15**, *Rabbitbrush Facility Layout*, for a detailed view of the southern potential location option on the Chaparral site. The southern potential ESS location on the Chaparral site is located on a 10-acre parcel; while the potential ESS on that parcel (if constructed) would be 5 acres, nonetheless the entirety of the 10-acre parcel is accounted for in the acreage of the Chaparral site. The proposed two location options for the Rabbitbrush Solar ESS are shown on Figure 3-15, however, the ultimate location will be dependent on final design. Each ESS would consist of self-contained battery storage modules placed in racks, converters, switchboards, inverters, medium voltage transformers, controls, and integrated heating, ventilation, and air conditioning (HVAC) units, all enclosed in one or more buildings or in prefabricated metal containers.

If the ESS uses prefabricated metal containers, each container will be a 40 feet long by 8 feet wide battery container, with side-doors accessibility to the battery racks that are installed inside. Adjacent to one or two DC battery containers will be one PCS (power conversion station) container (each PCS container will be

20ft long by 8ft wide) that will hold the inverter and associated medium voltage transformer. For each facility, approximately 130 DC battery containers and approximately 65 PCS containers will be installed. Alternatively, depending on final design selection, multiple smaller energy storage units may be distributed through the PV arrays and situated adjacent to each PV inverter. The ESS or smaller energy storage units on the Chaparral Site would be charged by the Chaparral Site, and/or charged by energy from the electrical grid. The ESS or smaller energy storage units on the Rabbitbrush Site would be charged by the Rabbitbrush Site, and/or charged by energy from the electrical grid.

The battery storage modules would use proven storage technologies such as Lithium Ion, Sodium Sulphur, Vanadium-Redox-Flow, Zinc-based, or Iron-based batteries. More containers may be required due to the lower energy density of some of the technologies.

All prefabricated metal containers and building(s) installed/constructed on the project sites would have appropriate fire suppression systems built to applicable state and local code requirements. The final design would include appropriate containment features to prevent the escape of liquids or spills from the ESS site.

Generation-Tie Line and Interconnection to the Statewide Grid

The project will interconnect to the SCE Whirlwind Substation, as shown on **Figure 3-10**, *Project Site Plan*. The project will share off-site substations and gen-tie lines associated with the previously permitted Willow Springs Solar and North Rosamond Solar Projects as shown on **Figure 3-11**, *Chaparral Solar Site – Willow Springs Substation Shared Facilities*, and **Figure 3-12**, *Rabbitbrush Solar Site – Rosamond Substation Shared Facilities*. Project interconnection will require SCE to install new interconnection-related components at the Whirlwind Substation such as additional control equipment. As proposed, the aforementioned components would occupy a maximum area of 100 square feet and will be attached to existing racks (i.e., not ground-mounted). Approval of the SCE Interconnection Facilities is within the sole discretionary permitting jurisdiction of the CPUC. However, because CEQA requires analysis of the environmental impacts of the full project, the project description includes the SCE Interconnection Facilities related to the propose project for this purpose.

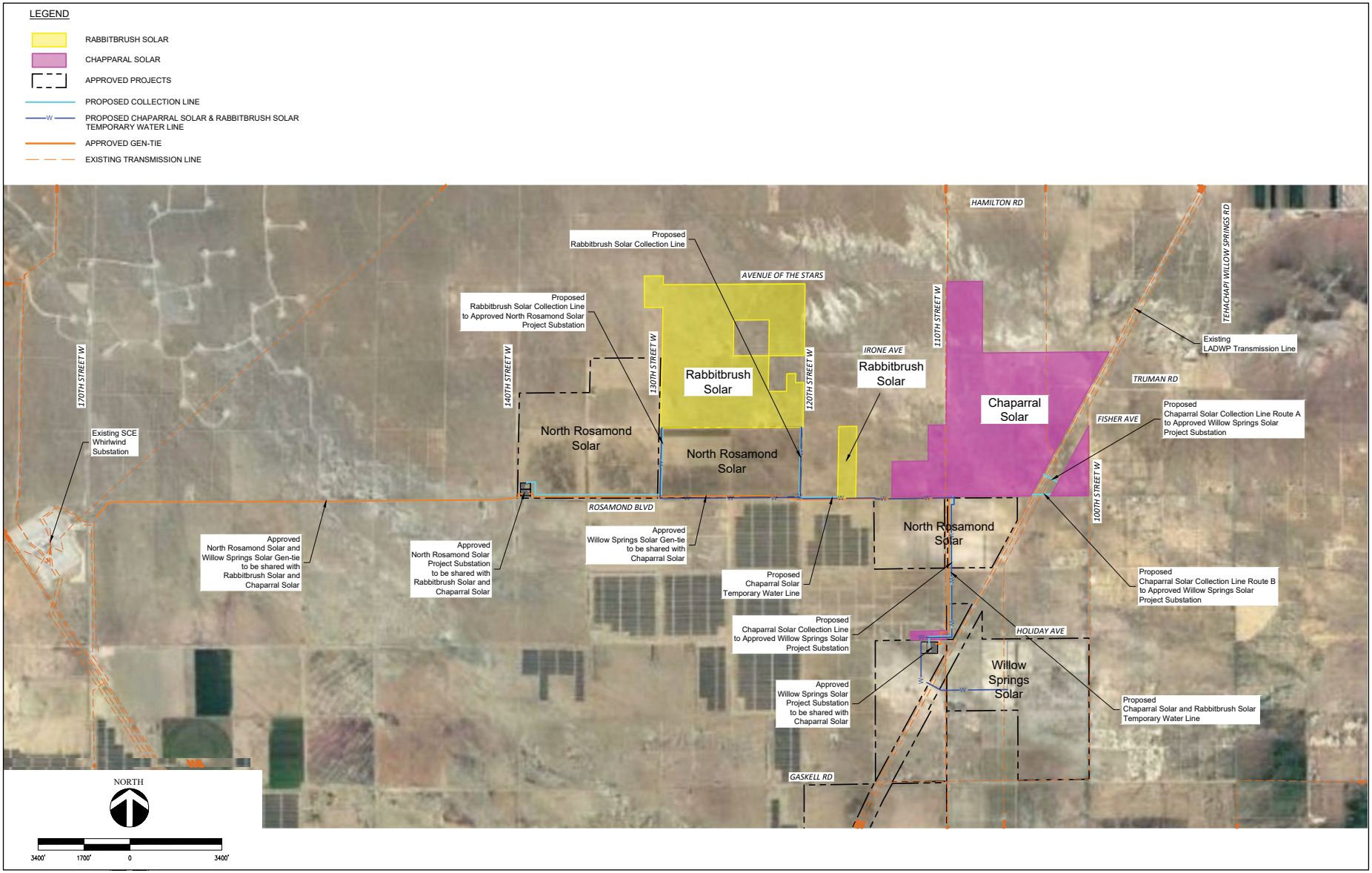


Figure 3-10: PROJECT SITE PLAN

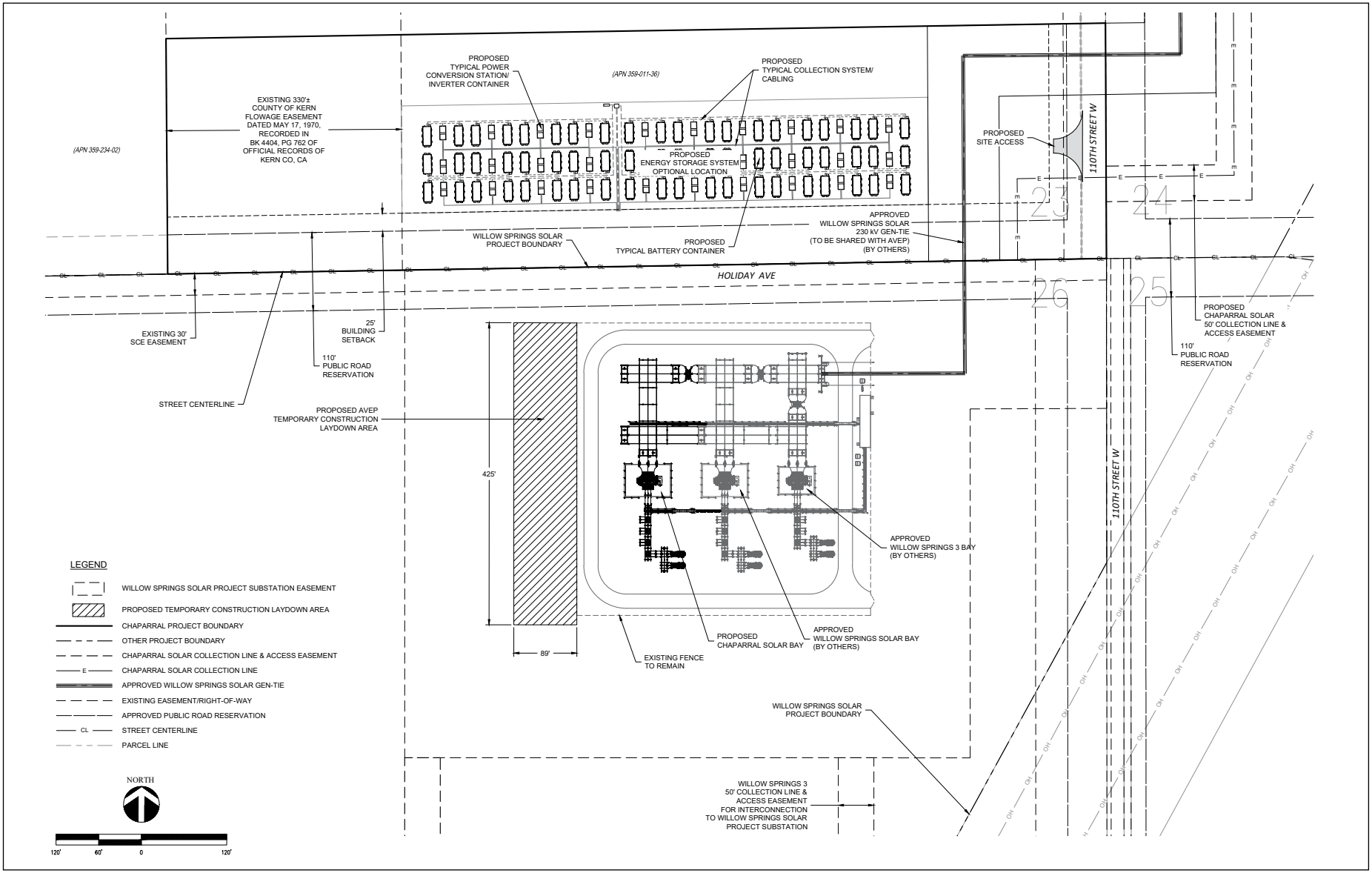


Figure 3-11: CHAPARRAL SOLAR SITE - WILLOW SPRINGS SUBSTATION SHARED FACILITIES

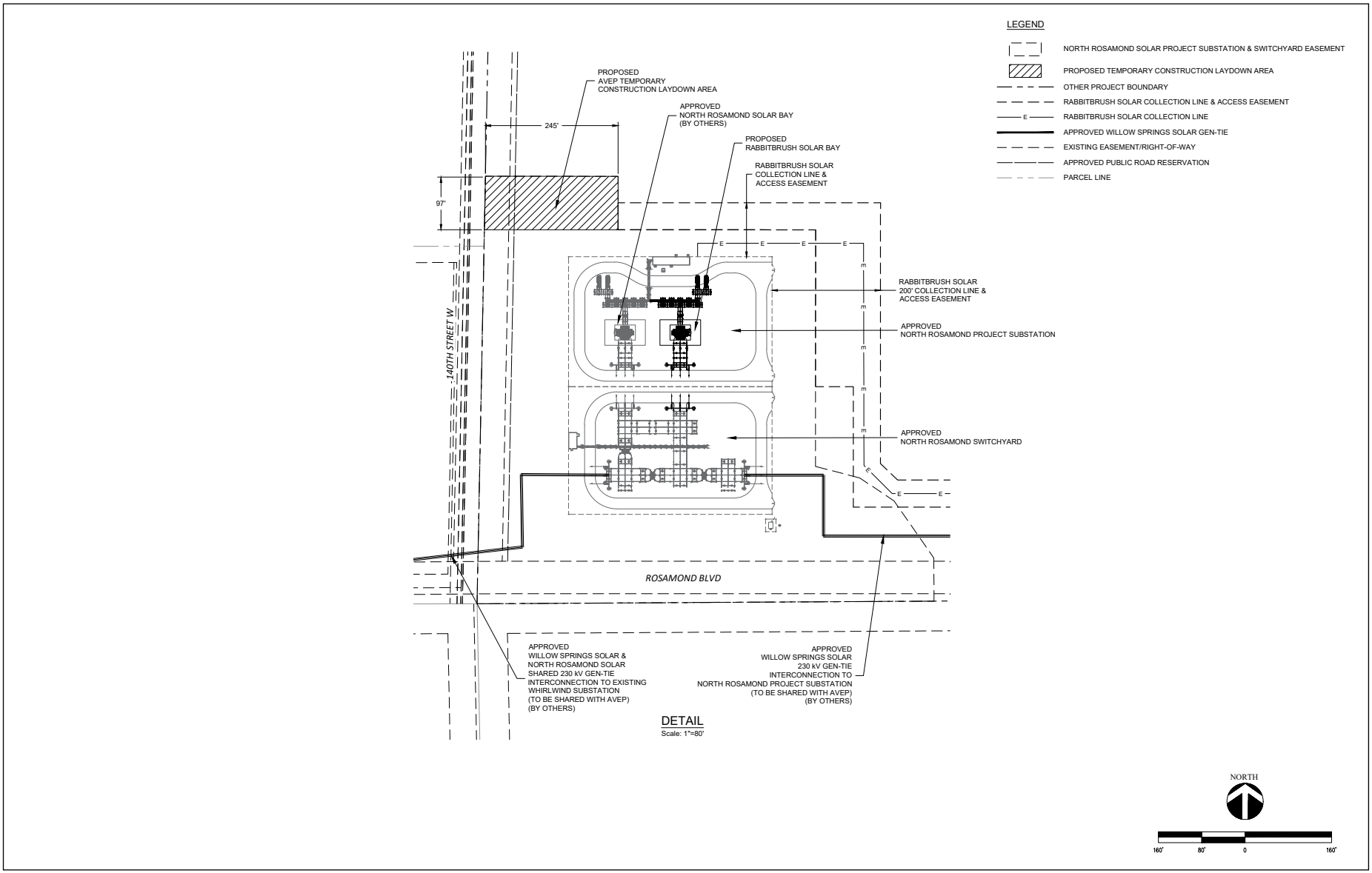


Figure 3-12: RABBITBRUSH SOLAR SITE - ROSAMOND SUBSTATION SHARED FACILITIES

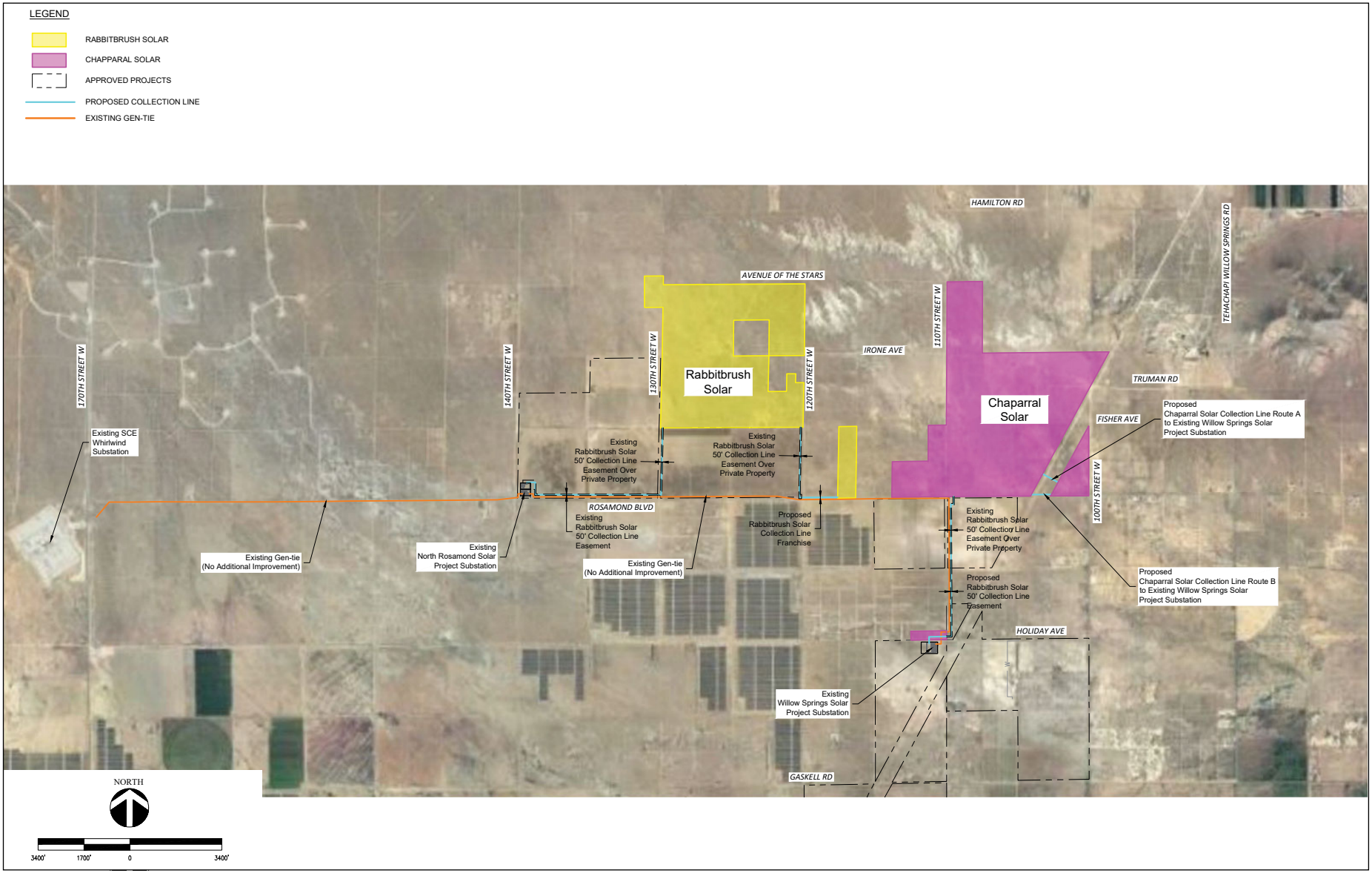


Figure 3-13: COLLECTION LINES AND GEN-TIE MAP

Restroom Facilities

As proposed, the proposed project would include the following restroom facilities:

- Restroom facilities inside of commercial coaches (served by water supply line and septic system).
- Restroom facilities inside of O&M Building(s) (served by water supply line and septic system).
- Portable toilets (not served by water supply line, not served by septic system). These portable toilets would be serviced by truck, and any waste generated would be disposed of at an approved off-site disposal facility.
- Portable hand washing facilities (not served by water supply line, not served by septic system). These portable hand washing facilities would be serviced by truck, and any wastewater generated would be disposed of at an approved off-site disposal facility.

On-Site Communications Towers

Communications towers are proposed on the project site as follows:

- One communications tower on the Chaparral site, with a maximum height of 50 feet
- One communications tower on the Rabbitbrush site, with a maximum height of 50 feet

The purpose of the communications towers is: (a) to facilitate communication between on-site entities and off-site entities, during the construction and decommissioning phases of the AVEP Solar Project; and (b) to transmit operational data to off-site monitoring systems during the operational phase of the AVEP Solar Project.

On-Site Meteorological Stations and Meteorological Towers

The proposed project will have approximately 8-foot-high meteorological stations within the solar field on pole or post. A minimum of four meteorological stations (two per facility) are proposed. The total quantity of meteorological stations will be dependent on customer and off-taker requirements. A meteorological station is a device that collects data related to weather and the environment using many different sensors. The sensors may include a thermometer to take temperature readings, a barometer to measure pressure in the atmosphere, as well as other sensors to measure rain, wind and humidity.

Meteorological towers will be installed around the perimeter of the solar field (in addition to meteorological stations), if tracker technology is utilized. If tracker technology is not utilized, meteorological towers will not be installed. Meteorological towers will be 20-foot tall steel lattice or monopole towers mounted on concrete foundations. Up to 12 meteorological towers may be installed on the project site. A meteorological tower is a free-standing tower which carriers measuring instruments with meteorological instruments such as thermometers and instruments to measure wind speed.

The preliminary locations for the meteorological towers are shown on **Figure 3-14**, *Chaparral Facility Layout*, and **Figure 3-15**, *Rabbitbrush Facility Layout*.

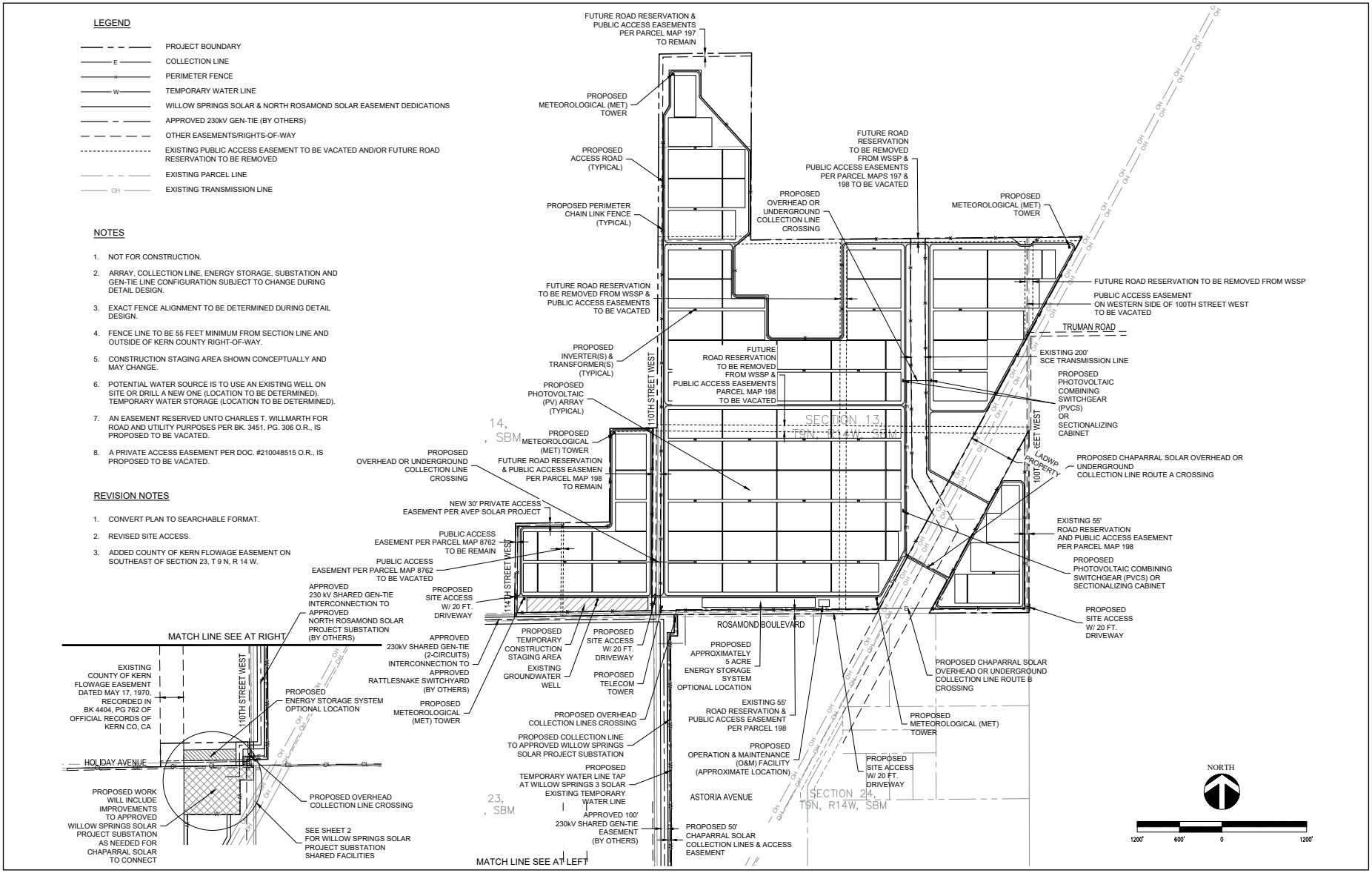


Figure 3-14: CHAPARRAL FACILITY LAYOUT

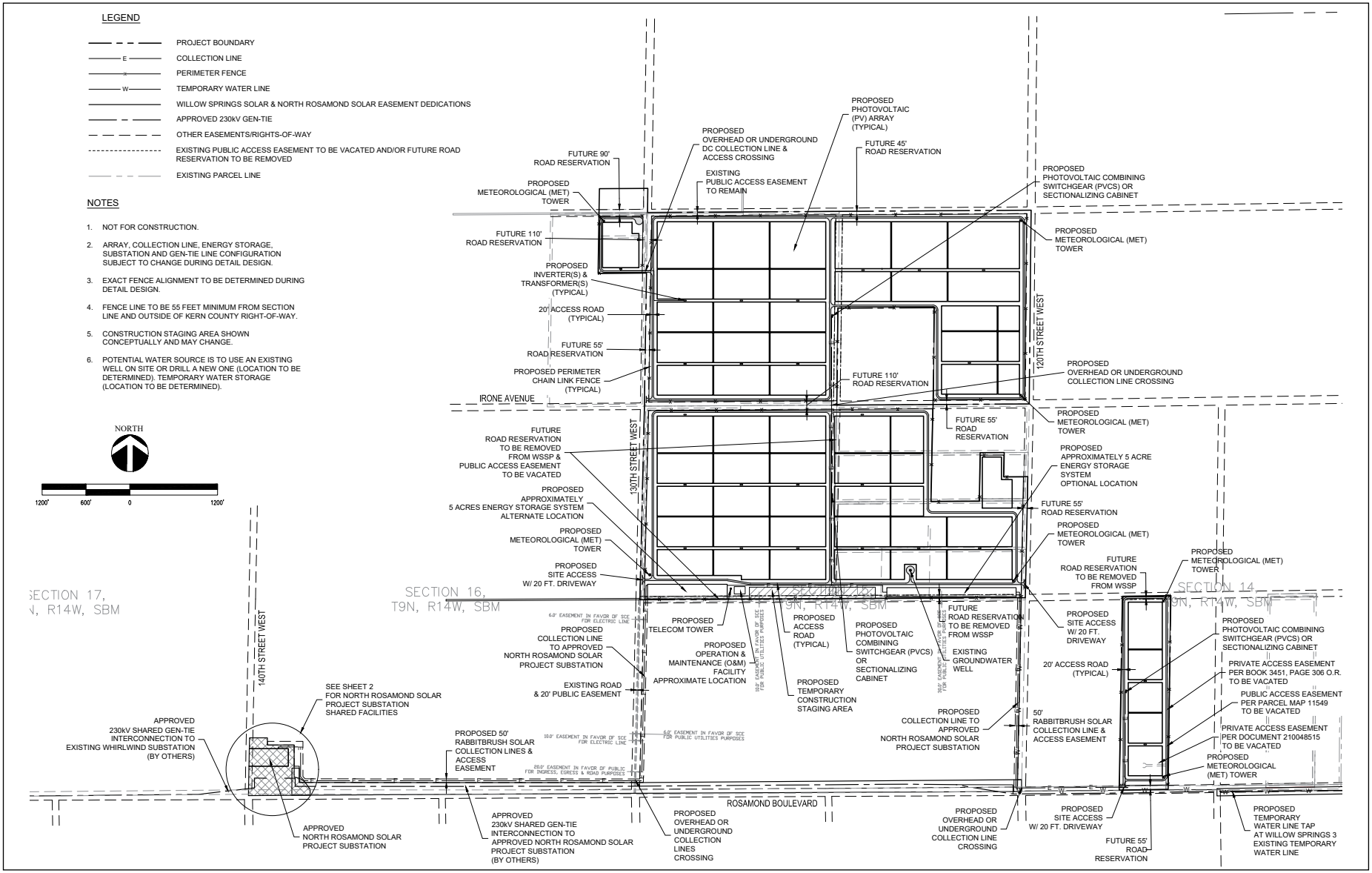


Figure 3-15: RABBITBRUSH FACILITY LAYOUT

Site Access and Internal Circulation

The proposed project will have private driveway access off of County roads, private perimeter access roads, and interior access ways for construction and operation. Perimeter access roads and interior access ways will be composed of native compacted earth. All driveway approaches to/from the public right of way will be constructed in accordance with Kern County Development Standards. The project would be primarily accessed from State Route 14 via Rosamond Boulevard or from State Route 138 via 170 St West. Road improvements may be required as part of the project.

Chaparral Solar may have driveways from Rosamond Boulevard, 100th St West and 110th St West. Rabbitbrush Solar may have driveways from 130th Street West, 120th St West and Rosamond Boulevard. Preliminary driveway locations are shown on each facility layout, but may change during final design based on engineering considerations.

Site Security

Security fencing would be installed around each facility perimeter (non-contiguous portions will be fenced separately), and additional fencing will be installed around each substation, ESS, and other areas requiring controlled access, in order to restrict public access during construction and operations. Security fencing would be six feet tall and topped with three strands of barbed wire for a total height of seven feet. The fence posts may be set in concrete. Additional security may be provided through the use of closed-circuit video surveillance cameras and intrusion systems, electronic security systems or other available technology. On-site personnel may be part of 24-hour site security.

Night lighting will be installed for security and maintenance needs at the main access entrances, O&M Building(s), substations (as necessary), and major equipment enclosures. The O&M Building(s) and substation lighting will be controlled by motion sensors, by a control switch accessible within the site control center or as required by code. A site control center (SCC) is a mechanical and electrical equipment room, a separate structure with air conditioning, lighting, receptacles and alarm monitoring, built to house substation electrical controls and the auxiliary power for control systems to operate a substation. There is an existing site control center located adjacent to the existing North Rosamond Solar substation and Willow Springs Solar substation; one new site control center is proposed in conjunction with each proposed facility. The estimated size of each site control center is approximately 700 square feet. Night lighting would be directed inwards, shielded and/or have reduced lumens. Maintenance of the plant may be necessary during nighttime hours. In this event, portable, directional lighting would be utilized for the work areas. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties, in conformance with the Kern County Zoning Ordinance (Chapter 19.81) – Outdoor Lighting – Dark Skies requirements.

3.7.1 Construction Activities

Construction Schedule

Construction of the project is anticipated to take 12 to 24 months. Each facility will have different completion dates depending upon power procurement contracts.

The on-site construction workforce will consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. The on-site construction workforce for the project is expected to peak at 946 individuals (or worker vehicles), however, the average daily workforce is expected to be 688 individuals on-site during construction.

Construction activities would be conducted consistent with Kern County Code of Ordinances, Title 8, Chapter 8.36.020 (Noise Control) regarding hours of construction or as approved by Kern County. Certain activities such as high-voltage system modifications may need to occur at nighttime and will be performed with shielded, temporary lighting.

Site Grading and Earthwork

Construction of the project will require the following temporary facilities:

- Two construction staging areas on the project site (one on each of the two facilities) consisting of commercial coaches for offices and first aid station, parking, portable toilet, septic system(s), temporary power service from the electrical grid, temporary generators, truck loading and unloading area, material staging and assembly area, material storage area, and receptacles for trash;
- A construction staging area to be used for substation modifications on North Rosamond Solar and/or Willow Springs Solar Project property;
- Construction workforce parking area with adequate parking spaces for the workforce necessary for construction of the project;
- Off-site stringing and pulling sites (i.e., installation of electrical/communications wire and poles or H-Frame structures) and temporary construction areas at each new structure for the Chaparral Solar, and Rabbitbrush Solar collection lines; and
- Temporary lined basin(s), as defined above.

Site Preparation

Sediment and erosion controls will be installed in accordance with all applicable regulations.

Materials will be recycled where feasible, with remaining disposal in landfills in compliance with all applicable regulations. There are two (2) existing residences located within the proposed project boundaries, as referenced below. The existing residences and residential accessory structures are proposed to be demolished and removed, or to remain and be repurposed as O&M Building(s) (for the Facility respective to their location) in compliance with applicable Kern County Building code requirements:

- Residence #1: located on APN 358-160-09, Rabbitbrush facility, uninhabited
- Residence #2: located on APN 358-152-27, Chaparral facility, inhabited

Within the solar field areas, a combination of mowing, “disk-and-roll” techniques and, where necessary, conventional grading may be used to prepare the site for array installation. In areas where mowing will not yield a satisfactory work surface, disk-and-roll techniques may be utilized. Disk-and-roll site preparation uses tractors pulling disking equipment to till under vegetation. Grading will be minimized to the extent practical. Conventional grading techniques may be used for PV array locations, access roads, parking areas, substations, energy storage systems, building or equipment foundations, detention pond(s), retention pond(s), and laydown areas.

Construction will begin with the installation of fencing around the perimeter of each individual facility site. The perimeter fence will also include signs providing directions to primary site access. Road corridors, buried electrical lines, PV array locations, and the locations of other facilities may be flagged and staked in order to guide construction activities.

Solar PV Generating Facility Installation

Each individual solar PV facility installation will include site preparation to accommodate the placement of PV arrays, concrete for foundations, access roads, and drainage features.

The construction of the solar field will proceed in array blocks and will include the following:

- Installation of steel posts and mounting system;
- Installation of PV modules;
- Installation of overhead, aboveground, or underground collection system cable and associated equipment on concrete pads, vaults, posts or poles; and
- Concrete foundations for substation equipment, ESS, and O&M Building(s). Final concrete specifications will be determined during detailed design engineering in accordance with applicable building codes. These concrete foundations may be precast or cast in place.

Substations

The existing substations (constructed for Willow Springs Solar and North Rosamond Solar) which will serve the proposed project are fenced to provide required security around the high-voltage electrical equipment, however, additional fencing will be installed as necessary to meet security requirements of the proposed project. Equipment installation associated with the transformers, breakers, bus-work, and metal dead-end structures (i.e., structures where a line ends, which require a design capable of carrying heavier tension) will follow at the existing substations. The mineral oil-filled transformers may arrive pre-filled or may be filled on-site. There is an existing site control center (SCC) located adjacent to the existing substations, which houses substation and plant control equipment, meters, backup generators (diesel or battery powered), and other electrical equipment.

Table 3-3, *Willow Springs Solar and North Rosamond Solar Substations Modifications*, outlines the necessary modifications required at the Willow Springs Solar Project Substation and North Rosamond Solar Project Substations for the Interconnection proposal.

TABLE 3-3: WILLOW SPRINGS SOLAR AND NORTH ROSAMOND SOLAR SUBSTATIONS MODIFICATIONS

Facility	Willow Springs Solar Project Substation	North Rosamond Solar Project Substation
Chaparral Solar Facility	The fence line to be expanded and new equipment installed. Earthwork needed.	N/A
Rabbitbrush Solar Facility	N/A	New equipment to be installed. No earthwork needed.

Energy Storage System Construction

The project may have up to two on-site Energy Storage Systems (ESS) (one for each facility developed). Each ESS will be composed of battery storage modules placed in multiple prefabricated enclosures or in a building near the on-site substations. The area will be graded, compacted, and leveled, followed by the application of an aggregate rock base. The ESS area will be separately fenced. If placed in prefabricated enclosures, the construction will include moving the ESS enclosures with a crane or forklift to the appropriate location. If a building is used it will be assembled on site. The final location option of the ESS enclosures is dependent on final design and may require construction of a vault or other form of supporting foundation.

Construction of Operations and Maintenance (O&M) Area

The project may include up to two O&M areas, one for each facility. Each facility may utilize and repurpose existing on-site residential structures, or alternatively, each Facility may construct a new O&M building.

If a new building is to be constructed on either of the facilities, the O&M area may include a one-story O&M building approximately 1,000 square feet that will house administrative, operation, and maintenance equipment along with sanitary facilities (i.e., septic system). Concrete foundations will be poured to support the O&M building, and a 1,500 square foot area adjacent to the building will be surfaced with gravel for employee parking. Aboveground water storage tank(s), water lines to the facility water source, septic system and other associated facilities will be constructed in the O&M area. Storage enclosures (similar in size to a cargo container) may be installed on concrete pads. The design and construction of the O&M Building(s) will comply with applicable County building standards.

Water Use

Construction activities for the proposed project are anticipated to require approximately 600 acre-feet of water. During the construction phase, water for the two solar facilities will be supplied from one or more of the following options:

1. Potential and/or existing well(s) on each individual facility site and/or well(s) which may be shared by the two facilities.
2. Existing well(s) on the Willow Springs Solar Project site. If water is supplied from the Willow Springs Project site, it will be piped via temporary construction pipeline(s) or trucked.
3. Trucked Antelope Valley-East Kern Water Agency (AVEK) water collected at one of the nearby locations owned by AVEK.

There are 8 known existing water wells on the project site described as follows, however, the project proponent has not completed testing yet to know if the wells are viable for use in conjunction with the proposed project:

1. Water well 1, Rabbitbrush Facility Site, APN 358-152-54
2. Water well 2, Rabbitbrush Facility Site, APN 358-160-09
3. Water well 3, Rabbitbrush Facility Site, APN 358-010-04
4. Water well 4, Rabbitbrush Facility Site, APN 358-030-29

5. Water well 1, Chaparral Facility Site, APN 358-152-27
6. Water well 2, Chaparral Facility Site, APN 358-030-12
7. Water well 3, Chaparral Facility Site, APN 358-030-08
8. Water well 4, Chaparral Facility Site, APN 358-390-16

Solid and Nonhazardous Waste

The project site would produce a small amount of solid waste from construction activities. This may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation wastes. These wastes would be segregated for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. Vegetation wastes generated by site clearing and grubbing would be chipped/mulched and spread on site or hauled offsite to an appropriate green waste facility.

Hazardous Materials

The hazardous materials used for construction would be typical of most construction projects of this type. Materials would include small quantities of gasoline, diesel fuel, oils, lubricants, solvents, detergents, degreasers, paints, ethylene glycol, dust palliative, herbicides, and welding materials/supplies. A hazardous materials business plan would be provided to the Kern County Public Health Services Department, 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.

Hazardous Waste

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

3.7.2 Operation and Maintenance Activities

The operation and maintenance of the proposed project will require up to 20 full-time equivalent (FTE) personnel (or personnel hours totaling 20 FTE positions). One FTE position is equivalent to 40 personnel hours per week. Operations and maintenance staff will typically work during regular business hours Monday through Friday. During periods when non-routine maintenance or major repairs are in progress, the maintenance staff will typically work during nights when the project is not generating power to the grid.

The project may utilize 24-hour security (any security personnel are included in the aforementioned 20 FTE positions figure).

Preventive maintenance kits and certain critical spare equipment will typically be stored on-site, while all other components will be readily available from a remote warehouse facility.

Operations Water Use

The project's operational water consumption is expected to be approximately 20 acre-feet per year to be used for toilets and hand washing facilities, fire protection, and potentially for PV solar panel washing. Water storage tank(s) may be installed at the O&M areas to store water. Potable water would be imported for O&M staff consumption as necessary.

Operations water for the two solar facilities will be supplied from one or more of the following options:

1. Potential and/or existing well(s) on each individual facility site and/or well(s) which may be shared by the two facilities.
2. Existing well(s) on the Willow Springs Solar Project site. If water is supplied from the Willow Springs Project site, it will be piped via temporary construction pipeline(s) or trucked.
3. Trucked Antelope Valley-East Kern Water Agency (AVEK) water collected at one of the nearby locations owned by AVEK.

3.7.3 Decommissioning

Solar equipment typically has a lifespan of over 30 years. The project expects to sell the renewable energy produced by the project under the terms of a long-term Power Purchase Agreement (PPA) with a utility or other power off taker. Upon completion of the PPA term, the project operator may, at its discretion, choose to enter into a subsequent PPA or decommission and remove the system and its components. Upon decommissioning, the solar facility could be converted to other uses in accordance with applicable land use regulations in effect at that time. The options for water supply during decommissioning are the same as those listed above, under the Operational Water Requirements heading.

It is anticipated that, during project decommissioning, project structures that would not be needed for subsequent use would be removed from the project site. Above-ground equipment that may be removed would include module posts and support structures, on-site transmission poles that are not shared with third parties and the overhead collection system within the project site, inverters, transformers, electrical wiring, equipment on the inverter pads, and related equipment and concrete pads. The substations would be removed if owned by the project operator and not shared by third parties. However, if a public or private utility assumes ownership of the substations, the substations may remain on-site to be used as part of the utility service to supply other applications.

Equipment would be de-energized prior to removal, salvaged (where possible), and shipped off-site to be recycled or disposed of at an appropriately licensed disposal facility. Once the solar modules are removed, the racks would be disassembled, and the structures supporting the racks would be removed. Site infrastructure would be removed, including fences, and concrete pads that may support the inverters, transformers and related equipment. The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried by standard construction equipment. The fencing and gates would be removed, and all materials would be recycled to the extent practical. Project roads

would be restored to their pre-construction condition unless they may be used for subsequent land use. The area would be thoroughly cleaned and all debris removed. Materials would be recycled to the extent feasible, with the remainder disposed of in landfills in compliance with all applicable laws.

3.8 Entitlements Required

To implement this project, depending upon site surveys and jurisdictional determinations, the following discretionary and ministerial permits/approvals may be required if applicable to the project, including but not limited to the following:

Federal

- U.S. Fish and Wildlife Service (USFWS), Incidental Take Permit, if required
- United States Army Corps of Engineers Jurisdictional Determination/Section 404 Permit, if required

State

- California Public Utilities Commission
- California Department of Fish and Wildlife (CDFW)
  - Section 1600 et seq. (Lake and Streambed Alteration Agreement), if required
  - Section 2081 Permit (Incidental Take Permit), if required
- Lahontan Regional Water Quality Control Board (RWQCB)
  - Waste Discharge Requirements, if required
  - Regional Water Quality Certification CWA Section 401 Permit (if 404 Permit is required)
  - National Pollution Discharge Elimination System (NPDES) Construction General Permit if impacts to federal jurisdictional waters will occur
- California Department of Transportation (Caltrans)
  - Right-of-Way Encroachment Permit, if required
  - Oversized Loads Permit, if required

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

Local

Kern County Board of Supervisors

- Consideration and Certification of Final EIR.
- Adoption of 15091 Findings of Fact and 15093 Findings and Statement of Overriding Considerations.
- Approval of proposed Mitigation Measure Monitoring Program.

- Approval for proposed changes to Land Use Map Codes of the Willow Springs Specific Plan.
- Approval for proposed changes in zone classification.
- Approval for proposed conditional use permits for the project site.
- Approval for proposed circulation amendments to the Willow Springs Specific Plan
- Approval for proposed nonsummary public access easement vacations.
- Approval of Franchise Agreement(s).

Kern County Public Works

- Approval of Kern County Grading Permits
- Approval of Kern County Building Permits
- Approval of Kern County Encroachment Permits

Kern County Fire Department

- Fire Safety Plan

Eastern Kern Air Pollution Control District (EKAPCD)

- Fugitive Dust Control Plan
- Any other permits as required

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

3.9 Relationship of the Project to Other Solar 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 solar project and, if approved, would not depend on any other solar project for economic viability.

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

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

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

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

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

Table 3-4, *Cumulative Projects List*, shows the related projects considered in the cumulative analysis. **Figure 3-16**, *Cumulative Projects Map – Kern County*, and **Figure 3-17**, *Cumulative Projects Map – Los Angeles County*, show the approximate location of the proposed solar projects in Kern County and Los Angeles County, respectively, considered in the cumulative analysis.

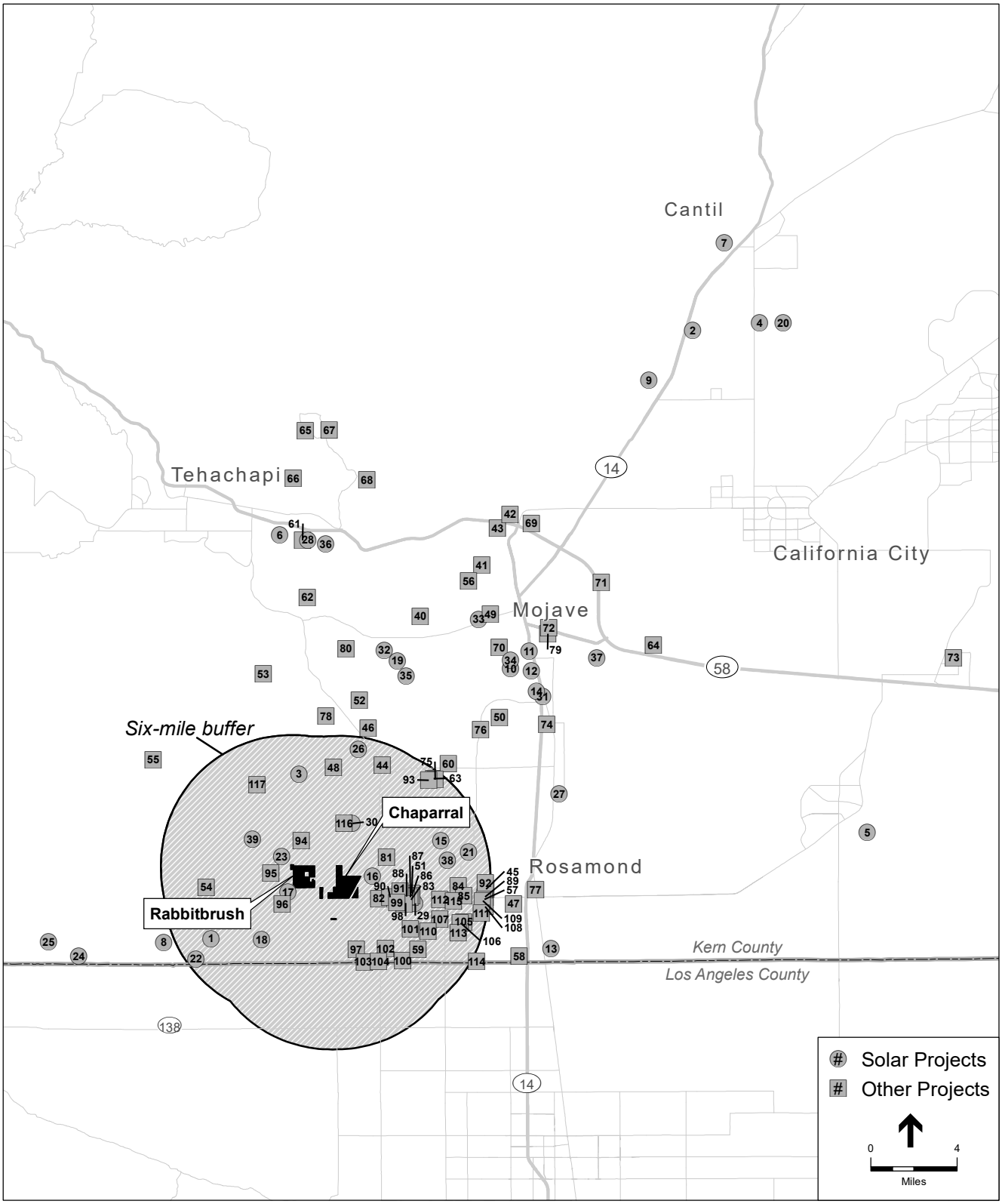


Figure 3-16: CUMULATIVE PROJECTS MAP - KERN COUNTY

Figure 3-17: CUMULATIVE PROJECTS MAP - LOS ANGELES COUNTY

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
EAST KERN COUNTY PROJECTS – FIGURE 3-15							
Solar Projects							
1. Antelope Valley Solar Project by Renewable Resources Group	Between 115th Street West and 190th Street West** (Rosamond)	650 MW	SPA, ZCC, CUP	GPA 17, ZCC 34, CUP 28, Map 232; GPA 3, ZCC 13, CUP 8, Map 233	Various	5,698 acres	Approved June 2011
2. Beacon Solar by Nextera	Four miles from California City, less than one mile southwest of the unincorporated town of Cantil/Rancho Seco	250 MW	CUP 11, Map 152	CUP for a 250 MW PV solar facility	Various	2,320 acres	Approved 10/1/12
3. Aurora Solar, LLC (Jen Bradford)	6970 Tehachapi Willow Springs Road**	40 MW	CUP	PV solar facility	346-032-05	320 acres	Construction has not commenced
4. Fremont Valley Preservation Solar Project	North of SR-58 and east of SR-14, in the Cantil/Rancho Seco area of eastern Kern	1,008 MW solar facility,	ZCC 3/CUP 1 Map 114; ZCC 13/CUP 13, Map 133; CUP 4, Map 134; CUP 12, Map 152; GPA 2 Map 114; GPA 3, map 133; GPA 2, map 134; GPA 3, Map 152	CUP	33 APN	4,806 acres	Pending approval

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
5. Edwards AFB Solar Project by Edwards AFB Solar, LLC	Edwards Air Force Base	600 MW solar facility	Franchise agreement, solar energy facility	Franchise agreement for routing a gen-tie transmission line from the proposed solar facility to the Southern California Edison Windhub Substation, solar energy facility	Various	approximately 3,500 acres of land within a 6000-acre area	EIS/EIR in progress
6. GE Energy LLC by URS Corp	13681 Chantico Road	40 MW	CUP	CUP 36, Map 167	Multiple	337 acres	Approved 6/19/09
7. LADWP	Jawbone Canyon Road	10 MW solar facility	CUP	Information Unavailable	Multiple	75 acres	Approved 12/16/09
8. RE Astoria by RE Astoria LLC (Recurrent)	Astoria Drive 180th Street, Avenue A, and 205th Street, Willow Springs area	175 MW solar facility	CUP 10, Map 233	Information Unavailable	Multiple	Approx. 2,000 acres	Approved December 2014
9. RE Barren Ridge	North of Phillips Road	74 MW solar facility	GPA, CUP	Information Unavailable	461-150-10	588 acres	Approved 12/6/11
10. RE Columbia	Mojave	20 MW solar facility	ZCC 46, CUP 31, Map 196	ZCC, CUP from A-1, R-2 PD, and C-2 PD to A	427-030-03	165 acres	Operational
11. RE Columbia 2	Purdy west of SR-14	20 MW solar facility	CUP 32, Map 196	ZCC, CUP from A-1, R-2 PD, and C-2 PD to A	427-030-03	132 acres	Operational
12. RE Columbia 3	Purdy west of SR-14	10 MW solar facility	CUP 33, Map 196	ZCC, CUP from A-1, R-2 PD, and C-2 PD to A	427-030-03	68 acres	Operational

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
13. RE Great Lakes	NE of Sierra Hwy and Avenue A	5 MW solar facility	ZCC 118, CUP 34, Map talina230	ZCC, CUP from A-1 to A	473-023-10	40 acres	Approved 12/6/11
14. RE Rio Grande	Mojave	47 MW solar facility	CUP 30, Map 196	Information Unavailable	Multiple	5 acres	Approved 12/6/11, Under Construction
15. RE Rosamond One	NW Favorito and 60th**	20 MW solar facility	SPA 1, ZCC 1, CUP 3, Map 231-03	SPA, ZCC, CUP for a PV solar facility, ZCC from 5.4 to A and A FPS	252-013-01	320 acres	Approved 12/6/11, Under Construction
16. RE Rosamond Two	Willow Springs*	20 MW solar facility	CUP 4, Map 231-03	SPA, ZCC, CUP for a PV solar facility, ZCC from 5.4 to A	252-013-01	160 acres	Approved 12/6/11, Under Construction
17. Rosamond Solar Array 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	Information Unavailable	Multiple	1,177 acres	Approved October 2014
18. 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

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
19. SEPV Mojave West	7,500 feet southeast of Oak Creek Road & 90th Street West	20 MW solar facility	GPA/ZCC/CUP	GPA to the KCGP Circulation Element to eliminate road reservations along section and mid-section lines, ZCC from A-1 to M-3, CUP for a 20 MW solar facility	237-054-03 and 237-032-33	180 acres	Operational
20. Fremont Solar (Springbok 2 Solar Farm) by 8 Minute Energy Renewables (3 sites)	Sects: 26 & 27 T.30S, R.37E MDB&M; 32 & 33 T.30S, R.38E; 12 T.31S, R.37E	230 MW solar facility	CUP Maps 133, 134, 152, 153	CUP for solar facility	Multiple	1296 acres	Approved March 2014
21. 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
22. Kingbird Solar	Northwest corner of 170th Street West and Avenue A**	40 MW solar facility	SPA, ZCC, CUP	3/ZCC 16 /CUP 9 Map 233	261-196-07	324 acres	Approved October 2014
23. Valentine Solar	Northeast corner of Hamilton Rd and 132nd Street West*	115 MW solar facility	GPA, SPA, ZCC, CUP	GPA 3/SPA 20/ZCC 12, 37/CUP 9, 10, 12, 30	Multiple	1,430 acres	Approved June 2016
24. RE Garland Solar	South of Patterson Road, North of Avenue A, West of 240th Street; East of 205th Street	200 MW solar facility	GPA, ZCC	GPA from 4.3 to 8.5 and ZCC from E-2.5 RS HM to A	Multiple	2,057 acres	Approved

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
25. RE Gaskell West Solar Project	Between Holiday Avenue, 225th Street, Avenue A, and the Los Angeles Aqueduct	125 megawatts solar facility	GPA, ZCC, CUP	GPA, ZCC, CUP for solar facility	Multiple	1,463 acres	Approved April 2017
26. Apollo Solar Project	South of Trotter Avenue, east of 100th Street West, and west of Tehachapi Willow Springs Road**	Combined 60 MW of electricity from three solar modules; temporary concrete batch plant; microwave communications tower; and elimination of road reservations along mid-section lines	GPA 5; CUP 37, 38, 39, 40 & 41	Eliminate road reservations along mid-section lines (GPA 5, Map 214). Three Conditional Use Permits for solar energy (Sunbow Site: CUP 37, Map 214; Tours Site: CUP 38, Map 214; Syracuse Site: CUP 39, Map 214). Concrete batch plant (CUP 40, Map 214). Microwave tower (CUP 41).	346-022-03; 346-131-12, 13, 14, 15, 16, 17, 18 & 19	500 acres	Active
27. FRV Mojave Solar, LP	Sierra Highway and Sopp Road	20 MW solar facility	CUP	CUP for 20 MW PV solar facility	431-010-02	174 acres	Operational
28. GE Energy by Ty Remington	South of Highway 58, East Chantico Road	Ten – 20 MW solar PV	CUP 36	Ten – 20 MW solar PV	224-120-11	820 acres	Construction has not commenced
29. Gettysburg Solar LLC	Southwest corner of Rosamond and 70th Street West**	20 MW solar facility	CUP	20 MW solar facility	374-011-06	159 acres	Construction has not commenced
30. IP Solar Company	Sec of Moconnell and 105th**	Solar Facility	CUP	CUP for Solar Facility	474-120-04	40 acres	Construction has not commenced

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
31. Rio Grande Solar By Recurrent Energy	E/S Highway 14 and Sierra Highway	5 MW Solar Facility	CUP 30	Cup to allow construction of a 5 MW PV solar facility	427-400-00	46 acres	Operational
32. Sinarpower Inc	South of Oak Creek Road	Solar energy facility	CUP 10	Solar energy facility	237-360-05	17.5 acres	Construction has not commenced
33. The Aeromen LLC	2 miles west of Mojave on Oak Creek	Solar: four PV solar projects on 237 acres (three 5 MW and one 10 MW)	CUP	Solar: four PV solar projects on 237 acres (three 5 MW and one 10 MW)	237-562-12	237 acres	Construction has not commenced
34. Columbia	Southeast Purdy Avenue and Goldtown Street	Solar Facility	CUP	CUP, Map 196	427-030-03	Information Unavailable	Fully constructed
35. SEPV Mojave West	Oak Creek Road	20 MW solar facility	GPA No. 17, Map 179; ZCC No. 54, Map 179; CUP No. 14, Map 179	GPA No. 17, Map 179; ZCC No. 54, Map 179; CUP No. 14, Map 179	Multiple	180	Operational
36. Windhub Solar	90th Street West and Purdy, Mojave	20 MW solar facility	CUP No. 17, Map 197	CUP No. 17, Map 197	237-350-02	304 acres	Construction has not commenced
37. GE Energy	South of Highway 58, east of Chantico Road	10-20 MW solar facility	CUP No. 36, Map 167	CUP No. 36, Map 167	224-120-11	820	Construction has not commenced
38. Monte Vista	Near Purdy Avenue and 10th Street East	Solar Facility	CUP No. 29, Map 196	CUP No. 29, Map 196	428-020-06	1,040	Construction has not commenced
39. Mojave and Tropico LLC	S/S SWEETSER RD**	GPA TO 5.3/4.4	GPA	GPA TO 5.3/4.4	252-014-32	79.5 acres	Construction has not commenced

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
40. EDF Renewable Development Inc. Richard Miller	W. of Rosamond, Southwest of SR-58**	Commercial (100 MW) Solar Photovoltaic Facility	CUP	100 MW Solar Facility	474-120-04	81.5 acres	Construction has not commenced
Other Non-solar Projects							
41. Addison Energy Wind Project	North of Oak Creek Road, approximately one mile south of Rosewood Boulevard on the east and west sides of 60th Street West, and two miles west of the unincorporated community of Mojave	Proposed wind facility	GPA, ZCC, CUP, CV	GPA, ZCC, CUP, CV	Multiple	1,325 acres	Approved May 2014; Operational
42. Alta East by Alta	South of SR-58, 3 miles northwest of the unincorporated community of Mojave	318 MW wind facility with up to 106 wind turbines	GPA, ZCC, CUP	GPA, ZCC, CUP	Multiple	2,592 acres	Operational

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
43. Alta Infill II Wind Energy Project EIR	West of Highway 14, east of Tehachapi-Willow Springs Road, south side of Highway 58, and north of Backus Road in the Tehachapi Wind Resource area, west of Mojave, eastern Kern County	530 MW wind facility	GPA, SPA	GPA, SPA	Multiple	5,185 acres	Operational
44. Alta-Oak Creek Mojave Project EIR	North and south sides of SR-58; three miles northwest of Community of Mojave	220 kV wind energy generation facility	ZCC, CUP	ZCC, CUP	Multiple	9,120 acres	Operational
45. Avalon Wind Energy Project	Immediately north of the intersection of Backus Road and Tehachapi-Willow Springs Road, Mojave Desert area, eastern Kern County**	300 MW	GPA, ZCC, CUP	ZCC to allow wind turbines onsite, CUP to allow for concrete batch plants	Multiple; 736 privately owned parcels	7,369 acres	Approved; not constructed
46. Barton, Larry by Pinnacle Civil Engineering	N/S Knox Avenue, 250 feet west of 40th Street West**	Information Unavailable	SPA, ZCC	SPA from 6.2/2.5 to 5.3, or 5.4, 5.45; ZCC from C-2 PD H to R-1 or E (1/2) PD H	472-110-11	Information Unavailable	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
47. Blue Eagle Lode Mining Company	Seven miles north of Willow Springs	Information Unavailable	CUP 32	Reclamation for an underground mine	346-021-04	1.75 acres	Information Unavailable
48. California Builders	S/S Poplar Street	Information Unavailable	ZCC	ZCC from E (2 1/2) to R-1	251-191-21	Information Unavailable	Information Unavailable
49. Catalina Renewable Energy Project	Two miles west of Backus Road and Tehachapi-Willow Springs Road**	200 MW wind from 134 wind turbines and 150 MW solar from 2,241,000 modules	ZCC, CUP	ZCC to join WE Combining District, CUP to allow temporary concrete batch plants	Multiple; 345 privately owned parcels	6,739 acres	Approved December 2011; 128 MW Solar operational
50. Catalina Solar 2 LLC (Enxco/ EDF)	Backus Rd - west of Tehachapi-Will Springs Road	Catalina 350 MW Wind & Solar Project.	CUP 7	Catalina 350 MW Wind & Solar Project. This CUP is for the solar facility.	Multiple	Information Unavailable	Operational
51. Golden Queen Mining Company	Soledad Mountain	Open pit mining with cyanide heap leach processing.	CUP	Modification of Surface Mining & Reclamation Plan	342-052-25, 427-130-11, 429-190-03	2,500 acres (905 acre mine site)	Approved April 2010. Mine and processing facilities are operational.
52. Largent Group, LLC/Cornerstone (10381)	NWC 75th Street West and Edwards Avenue**	Information Unavailable	ZCC	ZCC from OS to M-1 PD	Various	Information Unavailable	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
53. Lower West Wind Energy Project	One mile east of Tehachapi-Willow Springs Road and three miles south of Oak Creek Road in the Tehachapi Wind Resource Area of eastern Kern County	14 MW from seven wind turbines	ZCC	ZCC to join WE Combining District	237-053-18 through -28, 237-054-38	185 acres	Operational.
54. Morgan Hills Wind Energy Project	Three miles southwest of the intersection of Oak Creek Road and Tehachapi-Willow Springs Road	230 MW from 76 wind turbines	ZCC, CUP	ZCC to join WE Combining District, CUP to allow the use of a concrete batch plant	Multiple, privately owned	3,808 acres	Approved October 2011. Not constructed.
55. Pacific Wind Energy	To the north and west of the intersection of Rosamond Boulevard and 170th Street West**	140 MW from wind turbine generators	ZCC, CUP	ZCC to incorporate the WE Combining District, CUP to allow the use of concrete batch plants	Multiple; 480 privately owned parcels	8,500 acres	Operational

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
56. 2PdV Wind Energy Project	The project site is generally bounded to the north and west by the Tehachapi Mountains; to the south by the Los Angeles Aqueduct and beyond that, Rosamond Boulevard; and to the east by Tehachapi Willow Springs Road	300 MW of electricity from wind turbines	ZCC, CUP	ZCC from A to AE, from A-GH to A-WE GH, from A-FP to A WE FP, from A to A-WE, CUP to allow the use of concrete batch plants	476-010-14; 476-020-13; 476-020-11; 476-030-13; 476-020-14; 476-052-18; 476-110-01; 476-110-05; and 476-110-11	3,373 acres	Approved August 2008.
57. Rising Tree Wind Energy Project	Two miles north of Oak Creek Road and approximately one and half miles west of SR-58; on the east and west sides of 50th Street West; and two miles northwest of Mojave.	Up to 41 wind turbines producing approximately 135 MW	GPA, SPA, ZCC, CUP	GPA to the KCGP Circulation Element to eliminate road reservations along section and mid-section lines, ZCC to include the WE Combining District and EA District, CUP to allow for a temporary batch plant and construction/operation of WTGs	Multiple	1,535 acres	Approved May 2014. Approximately 30 turbines constructed to date.
58. Royal Investor's Group, LLC by Cornerstone Engineering	Rosamond Boulevard and 40th Street West**	Information Unavailable	GPA, ZCC	GPA from 5.3/2.5 to 6.2/2.5, ZCC from E (2 1/2) RS to C-2 PD	375-140-36, 38, 48, 49, 50	Information Unavailable	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
59. Superior Real Estate, Inc.	Northwest corners 25th Street and Avenue A	Information Unavailable	GPA, ZCC	GPA from 5.5/2.5/2.8 to 5.4/2.5, ZCC from A-1 to R-3 CL	473-130-13, 14, 473-140-25	Information Unavailable	Information Unavailable
60. Terra Five, LLC by Hall & Foreman, Inc.	SWC George Avenue and 70th Street West**	Information Unavailable	GPA, ZCC	GPA from 3.3/2.8 and 8.5/2.8 to 5.6/2.8, ZCC from A FPS to E (2 1/2) RS FPS	374-260-10	Information Unavailable	Information Unavailable
61. Renhong QU	9221 58th Street West, Mojave, CA 93501	Dog breeding and dog kennels	CUP	CUP for doing dog breeding and build dog kennels	345-124-03	4.7 acres	Active
62. Ares, LLC-Francesca Cava	12750 Chantico Road, Tehachapi 93561	Test track for and energy storing rail system	CUP	CUP for a test track for an energy storing rail system	224-120-12	200 acres	Approved September 2016
63. Cameron Canyon Ridgeline Wind Project	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
64. AT&T – Vance Pomeroy	1863 Highway 58, Mojave**	wireless communication facility	CUP	To allow an 80 foot tall ball field light standard for wireless communication facility	236-090-02	8.92 acres	Approved March 2017
65. AT&T – Vance Pomeroy	Gibbs Ave at Joshua Lane, Rosamond	wireless communication facility	CUP	Allow an 68'-6" tall monopine wireless communication facility with associated equipment shelter	345-142-21	1.25 acres	Active
66. Randy Hardenbrook	24630 Nyamazi Court	Information Unavailable	CUP	2nd MH to exceed size, might be changed to additional dwelling unit	224-590-14	19.85 acres	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
67. Jeff Quinn	Douglas Street and Lee Avenue, Tehachapi	Information Unavailable	CUP	A CUP for a private airport for recreational use	224-101-31	20 acres	Information Unavailable
68. Jennifer Arn	24575 Equestrian Drive	Information Unavailable	CUP	Kennel - dog breeder for Golden Retrievers	224-021-29	5 acres	Information Unavailable
69. Christopher Snow	9703 Pine Grove Drive Tehachapi	Information Unavailable	CUP	Install 4 RV Pedestals, 19.16.030 C for recreation	224-082-03	2.5 acres	Information Unavailable
70. Dona Recchia	Northerly of Street Route 58 Bypass	Information Unavailable	GPA	8.5/2.5, 8.3, & 4.1 to 6.3	224-610-04	233.06 acres	Information Unavailable
71. Grigor Termendjian	14675 Holt Street, Mojave	Information Unavailable	CUP	LNG Plant	427-112-11	9.76 acres	Information Unavailable
72. De Monte Family Trust -Ralph De Monte	Arroyo Ave east and west of SR-58	Information Unavailable	GPA & ZCC	Request is undefined	428-041-02	20.52 acres	Information Unavailable
73. Water Resorts Inc by Nelms Surveying	Highway 58 approximately 900 feet east of Airport	Information Unavailable	ZCC	Zone change to M-1	236-360-69	20.04 acres	Information Unavailable
74. Kilby, Bob/John Bell	2100 Mono Street	Information Unavailable	ZCC	M-1 PD FPS H	233-240-02	2.5 acres	Information Unavailable
75. Nazaryan, Tigran	E/S Sierra Highway, Mojave	Information Unavailable	CUP	RV Park	429-020-07	1 acre	Information Unavailable
76. Daunert, Diana/D Dmohowski	8448 Joshua Lane, Mojave**	Information Unavailable	CUP 25	Animal shelter & additional dwelling		10 acres	Information Unavailable
77. Maloney, Jay	Mojave-Tropico Road	Information Unavailable	CUP 28	Movie site	345-361-26	2.28 acres	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
78. Rosa Garcia	3303 Sierra Hwy #38, Mojave Tropico	Information Unavailable	CUP	Mobile home not meeting age/arch	345-361-17	2.44 acres	Information Unavailable
79. Frieling, Diana	11354 115th Street West, Rosamond	Information Unavailable	CUP	Wild Animal Keeping	474-083-06	40 acres	Information Unavailable
80. Jonathan Bender	1300 Block of Hwy 58 (South Side)	Information Unavailable	CUP	Mojave Solar Park by Cal West Energy	236-360-12	29 acres	Construction has not commenced
81. Romanowitz, Harold/J E Duggan	Sec 23 & 24 - "Yellow" Zone	Information Unavailable	CUP 40	Wind-driven electrical generators	237-073-01	n/a	Operational
82. Julien He & Associates	8684 Sweetser Road, Rosamond**	Information Unavailable	ZCC 144, Map 231	Information Unavailable	315-081-09	60	Information Unavailable
83. Blanca Ojeda	9009 Rosamond Boulevard East*	Recyclable collection facility	CUP, Map 231-18	CUP, Map 231-18	252-352-33	Information Unavailable	Not yet approved
84. Greg Scilley	Southwest corner of 75th Street West**	Information Unavailable	ZCC, Map 231	ZCC, Map 231	252-142-20	Information Unavailable	Not yet approved
85. Kona Land Co\Robb Hertz	Mojave Tropico Road, Willow Springs**	Information Unavailable	GPA	GPA to 5.3	252-080-03	19.71	Information Unavailable
86. EK Development/ HFM Group	N Rosamond Blvd 400' W of 50th ST W**	Information Unavailable	GPA	GPA to 5.3	252-091-27	10.42	Information Unavailable
87. Carlson by Debra Sheridan	75th Street and Rosamond Blvd**	Warehouse	ZCC	M-1 PD FOR A WAREHOUSE	252-142-20	2.57	Information Unavailable
88. Pazoogoin/Prime Self Storage	NEC Rosamond Blvd. 76th St. West**	Information Unavailable	ZCC	ZC TO M-1 PD	252-142-22	2.35	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
89. Robert VanDeusen	Rosamond Blvd. and 77th Street West**	Information Unavailable	ZCC	ZC from OS to M-1	252-142-32	2.43	Information Unavailable
90. Monterey Homes LLC	Rosamond Blvd West of 40th St West**	Information Unavailable	GPA	5.4/2.5 TO 5.3/2.5	252-162-04	0.91	Information Unavailable
91. Renita Rife	8543 W. Rosamond Blvd., Rosamond**	Cargo Container	ZCC	Cargo Container	252-331-19	2.22	Information Unavailable
92. Hollis, Jerald	80th Street West**	Information Unavailable	ZCC	ZC TO M-1; REVISED 1/7/07 TO A	252-332-11	2.46	Information Unavailable
93. Rosamond Acres LLC, by Wiley D Hughes Surveying	NWC 40th St West & Hook Ave**	Information Unavailable	GPA	GPA FROM 5.4/2.5 TO 5.3/2.5	252-370-05	19.71	Information Unavailable
94. Poth, Suzanne	8440 Woodland Lane**	Cargo Containers	CUP	MODIFY CUP TO ALLOW CARGO CONTAINERS	345-151-05	4.99	Information Unavailable
95. Hunter, Lany by H&H Surveying	W/S 125th St W, 1/8 Mi N Gillman**	Information Unavailable	GPA	GPA FROM 5.8 TO 5.7	358-101-04	20.14	Information Unavailable
96. Hughes, Arden/ Bruce Anderson	NWC Bright & Laurel*	Information Unavailable	ZCC	TO E(2 1/2) RS FPS	358-132-08	4.54	Information Unavailable
97. Mon-Wei Lin	SWC Rosamond Blvd & 130th St. West*	Information Unavailable	CUP	SOLAR FACILITY	359-020-05	321.22	Information Unavailable
98. Allyn, Greg by Don Ward	NWC of Kingbird Ave & 100th St W**	Information Unavailable	ZCC	ZC from A to E (2 1/2)	359-032-37	18.78	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
99. WDG Capital Partners (Elliott Macdougal)	S of Rosamond Blvd - East of 80th W**	20 MW Solar Facility	CUP	GETTYSBURG SOLAR PROJECT BY WEYMOUTH DEVELOPMENT GROUP (WDG) - 20 MW PHOTOVOLTAIC SOLAR FACILITY	374-011-38	77.98	Information Unavailable
100. Ewing, James	82nd Street West**	Information Unavailable	ZCC	ZC TO A	374-031-21	2.48	Information Unavailable
101. Troncale, Craig & Leslie	7980 Birch Ave**	DOG KENNEL & BREEDING	CUP	DOG KENNEL & BREEDING	374-122-17	2.28	Information Unavailable
102. Aurora Lopez	76th St and Willow Ave**	Information Unavailable	CUP	CUP for MH exceeding age as an additional single family dwelling	374-220-19	5.01	Information Unavailable
103. Sunlight Partners, LLC (Mark Roberts)	N of Elder between 90th W & 85th W**	Solar Facility	ZCC	PV SOLAR SITE ON 19 ACRES	374-250-08	19.18	Information Unavailable
104. Phillips, Michael	9703 W. Avenue A, Rosamond**	Cargo Container for storage	CUP	CARGO CONTAINER FOR STORAGE	374-322-08	2.13	Information Unavailable
105. Rocha, Joaquin & Norma	9159 W. Ave. A, Rosamond**	Secondary Residential Unit	CUP	SECONDARY R/U EXCEEDING SIZE	374-450-08	6.83	Information Unavailable
106. Rosamond 135 LLC/Hertz	SWC Holiday @ 50th Street West,**	Information Unavailable	ZCC	TO R-1 CL	375-062-08	10.03	Information Unavailable
107. Monterey Homes, Inc.	W/s 52nd St W 1/4 Mi So of Holiday**	Information Unavailable	ZCC	ZC to R-1	375-062-10	2.51	Information Unavailable
108. Slade	SEC Rosamond Blvd & 35th Street W**	Information Unavailable	ZCC	C-2 PD FPS H & A-1 TO R-1	375-103-32	2.51	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
109. Royal Investor's Group	4212 Rosamond Blvd., Rosamond**	Information Unavailable	ZCC	ZC to C-2 PD FPS H	375-140-40	29.44	Information Unavailable
110. Crossings Villas/ Alliance Land Planning	SS Rosamond Blvd. between 40th & 45**	Information Unavailable	ZCC	ZCC TO R-2	375-140-41	1.15	Information Unavailable
111. Monroy, Edgar	S/S Willow Ave, E/69th Street West**	Mobilehome	CUP	MOBILEHOME W/OUT STANDARDS	375-180-04	2.23	Information Unavailable
112. Rosamond Acres LLC/Wiley Hughes	N/S Holiday, between 40th & 45th**	Information Unavailable	ZCC	ZC TO R-1	375-200-09	10.23	Information Unavailable
113. Loettler, Greg	2890 62nd St. West, Rosamond**	Information Unavailable	CUP	MEDICAL HARDSHIP	375-220-33	4.84	Information Unavailable
114. Kansemento, LLC by Cornerstone Engineering, Inc	SEC 55TH STREET WEST & WILLOW AVE**	Information Unavailable	GPA	SPA FROM 6.2 TO 5.3	375-240-05	40.00	Information Unavailable
115. Zambrano, Jose	AVENUE A/ROSAMOND	Additional Dwelling Unit	CUP	ADDITIONAL D.U	375-260-07	4.71	Information Unavailable
116. Jones, Jimmy	SO OF ROSAMOND BVLD @ 57TH ST WEST**	Information Unavailable	CUP	MH NOT MEETING AGE & ARCHI	375-341-41	2.00	Information Unavailable
117. Bower, Christene	N/2 NW/4 SW/4 SEC 36**	Information Unavailable	ZCC	ZC TO E(5)	474-120-34	20.13	Information Unavailable
118. Royal Investors/ Cornerstone	SEC ROSAMOND BLVD. @ 4TH ST. WEST**	Information Unavailable	ZCC	TO R-1 FPS H	475-140-11	81.90	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
LOS ANGELES COUNTY PROJECTS – FIGURE 3-20							
City of Lancaster							
1. CUP 11-02	90th Street West between Avenue K-8 and K-12	3 MW solar facility, RR -2.5	Information Unavailable	Information Unavailable	Information Unavailable	Information Unavailable	Approved 9/19/11
2. CUP 11-03	Southwest corner of 90th Street West and Avenue H	10 MW solar facility, RR -2.5	Information Unavailable	Information Unavailable	Information Unavailable	Information Unavailable	Approved 9/19/11
3. CUP 11-05	Southeast corner of 80th Street West and Avenue J	20 MW solar facility	Information Unavailable	Information Unavailable	Information Unavailable	Information Unavailable	Approved 9/19/11
4. CUP 11-07	Southeast corner of 110th Street West and Avenue J	30 MW solar facility, RR -2.5, UR, SP	Information Unavailable	Information Unavailable	Information Unavailable	Information Unavailable	On hold
5. CUP 11-09	Northwest corner of 60th Street West and Avenue J	68 single-family dwellings, drainage channel and park	Information Unavailable	Information Unavailable	Information Unavailable	Information Unavailable	In review
6. CUP 10-22	Bounded by Avenue H, H-8, 80th Street West and 90th Street West	PV project comprised of two 19-MW solar fields	Information Unavailable	Information Unavailable	Information Unavailable	Information Unavailable	Information Unavailable
7. CUP 04-10	Southwest corner of 20th Street West and Ave J-8	Marriott Towne Place Suites	Information Unavailable	Information Unavailable	Information Unavailable	52,594± SF	Information Unavailable

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
8. CUP 10-20	East side of 30th Street West, north of Avenue M	Hindu temple, hall and other structures	Information Unavailable	Information Unavailable	Information Unavailable	2.48± acres; 2,169± SF Hindu temple, 2,017± SF hall	Information Unavailable
City of Palmdale							
9. CUP 12-008	Av Mall Ring Road	Proposed bona fide restaurant/cocktail lounge/nightclub	Information Unavailable	Information Unavailable	Information Unavailable	6,000 SF	Approved 6/18/13
10. SPR6-10-1T	South side Of Ranch Vista, east Of Tilbury Drive	Two year TE to previously approved project for 80 detached condos on 12.3 acres	Information Unavailable	Information Unavailable	Information Unavailable	Information Unavailable	Approved 9/5/13
11. PA11-019	SWC Of Lowes Drive And Rancho Vista	Five commercial retail buildings and carwash on 4.9 acres.	Information Unavailable	Information Unavailable	Information Unavailable	4.9 acres	Completed 6/18/13
12. PA11-021	North Of Auto Center Drive between Trade Center & 5th Street West	Industrial use; one building totaling approximately 350,640 SF on a 18.99 acre parcel	Information Unavailable	Information Unavailable	Information Unavailable	350,640 SF	Completed 6/18/13
13. PA13-001	Southwest corner of Lowe's Drive And Rancho Vista Boulevard	4.91 acres into retail/commercial totaling 44,400 SF in 5 buildings	Information Unavailable	Information Unavailable	Information Unavailable	44,400 SF	Completed 6/18/13
14. PA13-005	West Of 10th Street West	Subdivide 34.8 acres into 167 condo lots and a recreation lot	Information Unavailable	Information Unavailable	Information Unavailable	34.8 acres	Completed 6/18/13

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
Unincorporated – Los Angeles County							
15. R2011-00798 Western Antelope Blue Sky	STW/Vic K Avenue, Del Sur	40 MW PV project and a 10,000 gallon water tank located in the A-2-5 zone	RCUP	Information Unavailable	Information Unavailable	157 acres	Approved 6/11/14
16. R2011-00799 American Solar Greenworks	0 VAC/COR G/70 STW Avenue, Antelope Acres	35 MW PV project and a 10,000 gallon water tank located in the A-2-2 zone	RCUP	Information Unavailable	Information Unavailable	135.6 acres	Approved 6/11/14
17. R2011-00807 Antelope Solar Greenworks	0 VAC/90 STW/VIC I9 Avenue, Del Sur	52 MW PV project and a 10,000 gallon water tank located in the A-2-2 zone	RCUP	Information Unavailable	Information Unavailable	256 acres	Approved 6/11/14
18. R2011-00833 North Lancaster Ranch	10455 West Avenue B, Lancaster**	Proposed 20 MW PV project and a 10,000 gallon water tank	RZC	Information Unavailable	Information Unavailable	240 acres	Approved 6/11/14
19. R2012-00024 Quail Lake	0 VAC/290th Street East/ B Avenue, Lancaster	Solar energy generation facility	RCUP	Information Unavailable	Information Unavailable	Information Unavailable	Comments received 3/22/12
20. R2009-02239 AV Solar Ranch One	Avenue D and 170th Street West, Fairmont	240 MW PV project	RCUP	Information Unavailable	Information Unavailable	Information Unavailable	Approved 12/7/10
21. R2012-00849 Rutan	Columbia Way and 20th Street West, Palmdale	4 MW PV project	RPP	Information Unavailable	Information Unavailable	Information Unavailable	Approved 2/19/13
22. R2012-01589 West Antelope Solar Project	Avenue J and 112th Street West, Del Sur	20 MW PV project	RCUP	Information Unavailable	Information Unavailable	Information Unavailable	Approved 5/6/14

TABLE 3-4: CUMULATIVE PROJECTS LIST

Project Name	Location	Project Description	Case Type	Request	Project Site APN	Acreage/ Square Feet	Project Status
23. R2010-00808 Antelope Valley Solar	Avenue B and 135th Street West, Fairmont**	156 MW PV project	RCUP	Information Unavailable	Information Unavailable	Information Unavailable	Approved 1/3/13
24. R2011-00801 Silver Sun Greenworks	Avenue I and 120th Street West, Del Sur	20 MW PV project	RCUP	Information Unavailable	Information Unavailable	Information Unavailable	Approved 6/11/14
25. R2011-00805 Lancaster WAD	Avenue D and 35th Street West, Caliche	5 MW PV project	RCUP	Information Unavailable	Information Unavailable	Information Unavailable	Approved 6/11/14
26. R2011-01290	50th Street W & West Avenue L Quartz Hill, CA 93536	Construction, operation, and maintenance of an operations and maintenance facility for the Quartz Hill Water District	RCUP	Information Unavailable	3102026902	Information Unavailable	Approved 2/5/14
27. Project 91055	Lakeview Drive and El Camino Drive, Palmdale, CA	43 single-family residences on one acre minimum lots	RENV	Information Unavailable	3054022006	Information Unavailable	Application received
28. Project 2017-005888	8810 W. Ave. E-8, Palmdale, CA	CUP for a water company, Land Projects Mutual Water Co., to allow for construction/operation of one new well and two potential future wells	RCUP	CUP for construction/operation of one new well and two potential future wells	3264009021	7.66 acres	Approved

NOTES:

* Indicates that the cumulative project is located within 1 mile of the proposed project.
** Indicates that the cumulative project is located within 6 miles of the proposed project.

Section 4.1
Aesthetics

4.1.1 Introduction

This section of the EIR discusses impacts associated with the potential for the project to degrade the existing visual character or quality of the project site and its surroundings through changes in the existing landscape. Potential effects are evaluated relative to important visual features (e.g., scenic highways, scenic features) of the existing visual landscape and its users. Degradation of the visual character of a site is addressed through a qualitative evaluation of the changes to the aesthetic characteristics of the existing environment, and the project-related modifications that would alter the visual setting. Visual simulations were created by VisionScape and illustrates various views of the project site after buildout of the project. The visual simulations are shown in **Figures 4.1-2** through **4.1-6** in this section. The terms and concepts are used in the discussion below are used to describe and assess the aesthetic setting and impacts from the project.

Visual Concepts and Terminology

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

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

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

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

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

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

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

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

4.1.2 Environmental Setting

Regional Character

The project site is located within the western Antelope Valley, in the southeastern portion of Kern County. The project site is located approximately 5.5 miles west of the unincorporated community of Rosamond and is within the western Mojave Desert. The project site is approximately 2 miles north of the Kern County/Los Angeles County line.

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. Existing development in the project vicinity includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance facilities, mining, wind and solar energy, and meteorological towers.

The Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail, or PCT) is designated as a National Scenic Trail, and located approximately 4.5 miles west of the project site. Visitors to this trail may be negatively affected by the visibility of the solar panels and other infrastructure proposed for the project site. Forest, parkland, and preserve areas in the vicinity of the project site include the Angeles National Forest located approximately 33 miles south; the Desert Pines Wildlife Sanctuary and the Arthur B. Ripley Desert Woodland State Park located approximately 19 miles to the southwest; and the Antelope Valley California Poppy Reserve located approximately 16 miles to the south.

There are several planned, existing, and permitted solar energy and transmission projects in the region where the project site is located. In total, there are over 30,000 acres of existing large-scale commercial solar projects in the Eastern Kern desert areas. Surrounding solar projects in the vicinity include:

- **The Antelope Valley Solar Project:** abutting a portion of the Rabbitbrush facility on the south side of Rosamond Boulevard, approved in 2010, and currently operational.
- **Catalina Renewable Energy Project:** approximately 2.5 miles north of the Rabbitbrush facility, approved in 2011, and currently operational.
- **Rosamond Solar Project:** approximately 2 miles southwest of the Rabbitbrush facility, approved in 2010, and currently operational.
- **North Rosamond Solar Project:** abutting a portion of the Chaparral facility and the Rabbitbrush facility, approved in 2014, and currently operational.
- **Willow Springs Solar Project:** abutting a portion of the Chaparral facility, approved in 2016. Phase 1 is operational, and Phase 2 is under construction.

Furthermore, the Avalon Wind Energy Project site is located directly north of the Tours site across Backus Road, and was approved by the Kern County Board of Supervisors in December 2011. This project includes wind towers that generate up to 128 megawatts (MW) of energy, which are currently operational. In addition to the list above, the following solar projects have also been approved within 6 miles of the project site: RE Rosamond One, RE Rosamond Two, Windhub Solar, and Valentine Solar.

Local Character

The nearest populated areas to the project site in Kern County are the unincorporated community of Rosamond, the unincorporated community of Mojave, and the City of Tehachapi, which are approximately 5.5 miles east,

14 miles northeast, and 18 miles northwest of the project site, respectively. Existing development in the area includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, and wind and solar energy.

The project site is generally bordered by Avenue of the Stars to the north, 100th Street West and a transmission line easement utilized by the Los Angeles Department of Water and Power to the east, Rosamond Boulevard to the south, and 130th Street West to the west. The project would be primarily accessed from State Route 14 via Rosamond Boulevard, or from State Route 138 via 170 St West. Road improvements may be required as part of the project.

Elevations across the 1,406-acre project site range from approximately 2,300 feet above mean sea level to approximately 2,800 feet above mean sea level. As described in more detail in Section 4.4, *Biological Resources*, The Mojave Creosote Bush Scrub community dominates most of the proposed project site. This community typically occurs on well-drained soils in alluvial fans, bajadas, and upland slopes. Growth occurs during spring (or rarely in summer or fall) if rainfall is sufficient. This is one of the most widely distributed desert plant communities in the Mojave Desert, occurring from the desert floor up to approximately 3,500 feet in elevation and extending into northwestern Arizona and southern Utah. Scattered, widely spaced Joshua trees occur throughout portions of the creosote bush scrub communities present within Rabbitbrush Solar and Chaparral Solar; however, they do not occur at a density high enough to consider them a distinct woodland community. Patches of exposed soil dot the project site, and low drab olive to greyish mounded desert shrubs are occasionally observed in the area. There are two (2) existing residences located within the project boundaries, one on Chaparral Solar and one on Rabbitbrush Solar. Both existing residences and residential accessory structures are proposed to be demolished and removed, or to remain and be repurposed as O&M Building(s) (for the Facility respective to their location) in compliance with applicable Kern County Building code requirements.

Scenic Highways

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, there are no Designated State Scenic Highways within Kern County (see Section 4.1.3, *Regulatory Setting*, below for more information on the State Scenic Highway Mapping System). The closest Eligible Scenic Highways are SR-58 (portion east of SR-14), located approximately 9.5 miles north of the project site, and SR-14 (portion north of SR-58), located approximately 8 miles east of the proposed project site (Caltrans, 2019a). Prominent views along SR-14 and SR-58 adding to the scenic elements in the landscape for motorists include panoramic views of the open Mojave Desert landscapes and surrounding mountains, including the Tehachapi Mountains, San Gabriel Mountains, and southeastern extent of the Sierra Nevada mountains. In addition to the State Scenic Highway Mapping System, the Kern County General Plan Circulation Element designates scenic routes and defines a scenic route as any freeway, highway, road, or other public right-of-way, which traverses an area of exceptional scenic quality and must be officially set as a Scenic Route by the Kern County Board of Supervisors or the State of California.

Lighting Environment

The project site does not currently contain any lighting, and none of the dirt roads bordering or traversing the project site include street lighting. Minimal offsite fixed lighting in the area immediately surrounding the project site includes lighting fixtures associated with nearby residences, which contain small lighting fixtures installed on building exteriors, and main driveways or gates. These sources of lighting produce a

limited amount of nighttime lighting. The main source of nighttime lighting, although insubstantial, is from motorists passing through the area with headlights on, and from the required FAA lights on the wind turbine projects in the vicinity.

Solar Panel Glare Potential

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

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

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

4.1.3 Regulatory Setting

Federal

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

The National Trails System Act of 1969 seeks to preserve scenic and natural qualities along trails. The National Trails System Act assigns management responsibility for trails to various federal resource agencies, depending on which agency holds jurisdiction over the land on which the trail is located in a given area. The PCT was created under the National Trails System Act to provide for outdoor recreation opportunities and the conservation of significant scenic, historic, natural, or cultural qualities (National Park Service, 2016). PCT's southern terminus is on the U.S. border with Mexico, just south of Campo, California, and its northern terminus on the Canada–US border on the edge of Manning Park in British Columbia; its corridor through the U.S. is in the states of California, Oregon, and Washington. As stated previously, the PCT is located approximately 4.5 miles west of the proposed project site. Views of the project components from the PCT would be limited given their distance from the PCT, and intervening topography between viewers along the PCT and the project components would partially obscure views of the project components.

State

California Scenic Highway Program

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

As described in Section 4.1.2, *Environmental Setting*, there are no Designated State Scenic Highways within Kern County and the project site is not located directly adjacent to any eligible State Scenic Highway. The closest Eligible Scenic Highways are SR-58 (portion east of SR-14), located approximately 9.5 miles north of the project site, and SR-14 (portion north of SR-58), located approximately 8 miles east of the proposed project site (Caltrans, 2019a).

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

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

The Kern County General Plan acknowledges the three routes identified as part of the California Scenic Highways Master Plan that are designated "Eligible State Scenic Highway" within the County. Route 1, which begins north of Mojave and continues to the Inyo County Line, consists of State Route 14 and State Highway 395. Route 2 consists of State Route 58 between Mojave and Boron. Route 3 consists of 5 miles of State Route 41 in northwest Kern County. The project site would not be visible from any of these Routes. The Kern County General Plan provides general goals and policies for design features of development projects in order to reduce their impacts to scenic resources.

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

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

1.10.7 Light and Glare

Policies

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

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

Implementation Measures

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

Chapter 5: Energy Element

5.4.7 Transmission Lines

Goal

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

Policy

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

Willow Springs Specific Plan

The proposed project site is located within the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in 1992 and amended in 2008 as part of the Land Use, Open Space, and Conservation Element of the Kern County General Plan. Its goals, policies, and standards are compatible with those of the General Plan, but are tailored to the particular needs of the expanded Willow Springs area. The aesthetic-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project are outlined below (Kern County, 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included.

Land Use Element

Policies

Policy 1: Encourage the maintenance of visual aesthetics in all new construction.

Mitigation/Implementation Measures

Measure 16: A Joshua Tree Preservation and Transportation Plan shall be developed by the applicants for each parcel where Joshua trees are located on site. The plan shall be submitted to the Kern County Agricultural Commissioner's Office for review and approval prior to grading permit issuance.

Measure 17: Initial development within the Willow Springs Specific Plan Update area shall, when possible, be directed towards previously impacted areas (i.e., agricultural fields). Portions of the plan area with native vegetation, especially along the northern and western borders, shall be developed in the later phases of project buildout.

Kern County Zoning Ordinance

Chapter 19.81, Dark Skies Ordinance (Outdoor Lighting)

In November 2011, Kern County approved a Dark Skies Ordinance. The purpose of this ordinance is to maintain the existing character of Kern County by requiring a minimal approach to outdoor lighting, recognizing that excessive illumination can create a glow that may obscure the night sky and excessive illumination or glare may constitute a nuisance. The ordinance provides requirements for outdoor lighting within specified unincorporated areas of Kern County in order to accomplish the following objectives:

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

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

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

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

Kern County Development Standards

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

4.1.4 Impacts and Mitigation Measures

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

Methodology

The project's potential impacts to aesthetics have been evaluated using a variety of resources. In general, the potential aesthetic, light, and glare impacts associated with development projects are evaluated on a qualitative basis. This visual impact assessment is being utilized to identify and assess any potential long-term adverse visual impacts on aesthetics and visual resources that might result from implementation of the project during construction and operation. This assessment is based on the approved visual assessment practices employed by the FHWA (FHWA, 2015), the Bureau of Land Management (BLM) (BLM, 1978), the U.S. Forest Service (USFS, 1995), and other federal regulatory agencies. This method includes:

- Defining the project and its visual setting by assessing the project proponent's submitted project application materials, including plans and descriptions, and reviewing Google Earth Pro aerial photographs and street-level photography, Kern County Geographic Information System (GIS) topographic and land use data, and U.S. Geological Survey (USGS) topographic data;
- Conducting a field visit in November 2019 of the project site and vicinity to document the following:
  - Project site's visual characteristics.
  - Project vicinity's visual characteristics.
  - Establish a visual characteristic baseline.
  - Location of visual (sensitive) receptors in the vicinity.
- Establishing four Key Observation Points (KOPs) within vicinity from which to evaluate potential visual impacts resulting from implementation of the proposed project.
- Preparing visual simulations of post-development views from the KOPs.
- Assessing the project's impacts to sensitive views by applying the visual quality rating system to each of the visual simulations.
- Proposing methods to mitigate any potentially significant visual impacts identified.

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

Selection of Key Observation Points (KOPs)

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

The process of identifying KOPs focused on selecting viewpoints that could be used to accurately represent views from a broader range of viewpoints, particularly viewpoints from area sensitive receptors. The nature of solar fields, with large numbers of nearly identical and relatively low-lying PV panels, means that the

views encountered from differing angles would often be quite similar. Sensitive receptors near the project site include motorists, and viewers of the project site from rural scattered residences along local roads.

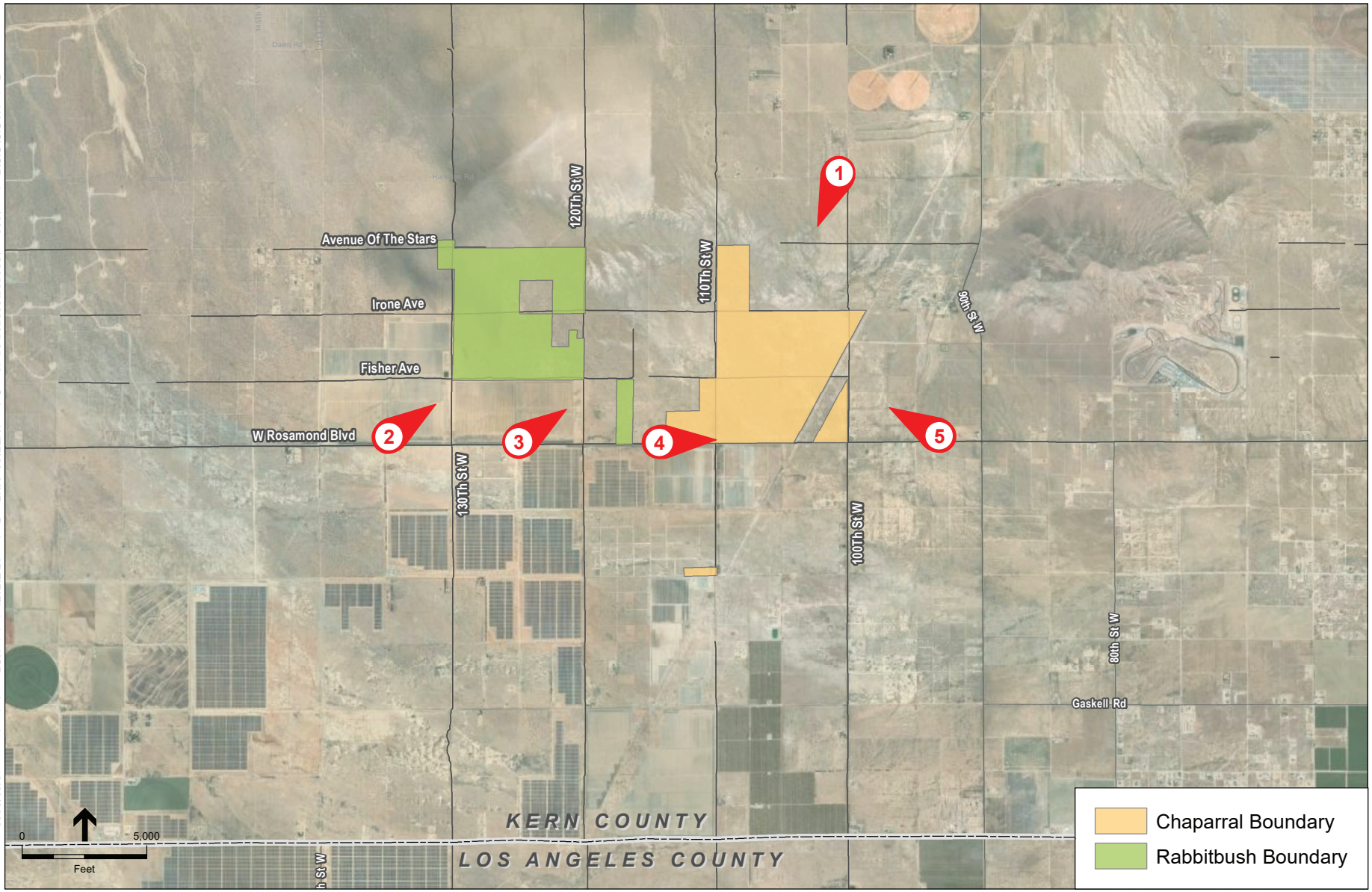
The familiarity with the view also influences how much attention is spent on the visual environment. Regular motorists may be highly familiar with the view and sometimes pay less attention; however, these motorists tend to be much more sensitive to changes in that view. People who are less familiar with the view may spend more time looking at the surrounding land, but would not notice changes in the view. The majority of existing motorists are likely to be residents driving to and from home.

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

Five KOPs were selected for visual simulation to create post-development views. The evaluated KOPs are mapped on **Figure 4.1-1**, *Key Observation Point (KOP) Locations*, and described below in **Table 4.1-1**, *Key Observation Points*. The KOPs selected for simulation were chosen because they represent views residents, motorists, and recreational users would experience from their adjacent homes and local roadways, respectively, when viewing the project site.

TABLE 4.1-1: KEY OBSERVATION POINTS

KOP	Location	Representative Sensitive Viewers
1	From the intersection of 100th Street W and Hamilton Road looking southwest toward the project site.	Residents located near the project site.
2	From the intersection of 135th Street W and Rosamond Boulevard looking northeast towards the project site.	Motorists on Rosamond Boulevard as they pass the project site.
3	From the intersection of 125th Street W and Rosamond Boulevard looking northeast towards the project site.	Motorists on Rosamond Boulevard and residents located near the project site.
4	From the intersection of 115th Street W and Rosamond Boulevard looking east towards the project site.	Motorists on Rosamond Boulevard and residents located near the project site.
5	From the intersection of Kildeer Street and Rosamond Boulevard looking northwest towards the project site.	Motorists on Rosamond Boulevard and residents located near the project site.



Path: U:\GIS\GIS\Projects\209xxx\209595\209595.25_KernSolar_AVEP\03_MXDs_Projects\DEIR\Fig4_1-1_KOP.mxd, janderson 12/23/2020

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

Simulation Preparation

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

TABLE 4.1-2: VISUAL SIMULATION METHODOLOGY AND ASSUMPTIONS

Photography from Key Observation Points	• Photos were taken on a clear sunny day in November 2019. • Canon 5D digital camera with a 35 to 52 mm zoom
Visual simulation assumptions	• Solar modules would be up to 13 feet in height and separated by approximately 12 feet. • Modules on single axis tracking system were used to show the worst-case visual impact. • O&M Building(s) covering approximately 1,000 square feet with a height of 12 feet. • Storage enclosures (similar in size to a shipping container) located in the O&M areas. • Energy Storage Systems would be approximately 5 acres in area. • On-site Meteorological Stations would be approximately 20-feet in height. • Transmission tower with maximum of 60 feet in height and a lightning protection mast, which would not exceed 75 feet in height. • Collection line structures up to 75 feet in height. • Three communication towers, each up to 100 feet in height (two on the Chaparral Site and one on the Rabbitbrush site). Fencing is 7 feet in height (6 feet of chain link topped by one foot of barbed wire). • Solar module setbacks from property line ranges: South 74'-206', West 87'-370', North 63'-482', East 93'-144'
Methods	Following data gathering phase, the process begins with a determination of proposed camera locations and/or station points. Upon review and approval of camera locations VisionScape coordinates the engineered site photography and schedules the initial site visit with County staff and/or project planner. This includes identification of reference points with GPS coordinates and specific fields of vision for each view. Concurrently, the modeling team develops an exact computer model of the proposed solar modules to illustrate elevations. Natural and finished pads, including existing and surrounding contextual elements such as streets, terrain, pads, and adjacent buildings (where applicable), were used as a reference. Upon completion of the 3D modeling phase realistic materials, maps, and textures are then applied. The next phase is assembly, during which the modeling is inserted into photographs taken during the field study using a full frame camera and camera match technology. 3D pads and boundary outlines are used to situate the modules to the proposed positions as shown on the cad provided. During this process, a computer model camera is aligned with the onsite photography to depict the project setting within each view. Lastly, a proposed landscape concept is applied (where applicable) and final artistic touches are made to ensure accuracy, and that the look and feel is consistent with the vision of the project. GPS and Camera Match Technology includes the use of a Trimble GeoXT (Sub-Meter) GPS device and a "Full Frame" digital camera for documenting coordinates at requested station points.

A comparison of existing views from the KOPs with visual simulations depicting visible project features, aided in determining project-related impacts. The simulations present a representative sample of the

existing landscape setting contained within the project site, as well as an illustration of how the project may look from the identified KOPs. Solar arrays are visually similar regardless of the manufacturer. Therefore, the solar arrays shown in the visual simulations are not necessarily identical to those that would be developed on the sites, but are similar enough to evaluate project impacts to aesthetics.

Rating Visual Quality

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

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

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

Depending on their character, these cultural modifications may detract from the scenery in the form of a negative intrusion or they may complement and improve the scenic quality of a view.

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

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

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

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

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

TABLE 4.1-3: VISUAL QUALITY RATING SYSTEM

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

NOTES:

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

SOURCE: BLM 1986

Thresholds of Significance

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

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

a. Have a substantial adverse effect on a scenic vista;

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

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

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

Project Impacts

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

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

There are no local areas that are designated as scenic vistas within the vicinity of the project site. However, the PCT, an important regional recreational facility and long-distance hiking and equestrian trail, is located approximately 4.5 miles west of the proposed project site in the foothills of the Tehachapi Mountains. The areas surrounding the project site have been heavily modified, with new solar panel facilities, including the Antelope Valley Solar Project, the Catalina Renewable Energy Project, the North Rosamond Solar Project, and the Willow Springs Solar Project, as discussed in Section 4.1.2, *Environmental Setting*, above. While implementation of the project would add new manmade elements to views from the PCT, the distance of the project site from the PCT trail along with intervening topography would result in limited distant views of project components. Distance from the PCT combined with intervening topography and the existing visual setting including solar, wind and transmission facilities would likely result in the project producing no noticeable impact to views from the PCT. Therefore, impacts to scenic vistas would be less than significant and no mitigation would be required.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

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

The project would not be visible from any Officially Designated State or County Scenic Highway. The closest Eligible Scenic Highways are SR-58 (portion east of SR-14), located approximately 9.5 miles north of the project site, and SR-14 (portion north of SR-58), located approximately 8 miles east of the proposed project site (Caltrans, 2019a). Although both SR-14 north of Mojave and SR-58 east of Mojave are designated as Eligible (E) for State Scenic Highway status (Caltrans, 2019a), they have not yet been Officially Designated. Therefore, construction and operation of the proposed project would not change the viewshed from any Officially Designated State or County Scenic Highway and impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

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

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

Construction

Construction activities associated with the project would create temporary changes in views of the project site. Furthermore, construction activities would introduce a considerable amount of heavy equipment, including backhoes, compactors, tractors, and trucks, into the viewshed of all viewer groups. During construction, there would be multiple crews working on the site with various equipment and vehicles, including special vehicles for transporting the modules and other equipment. The influx of construction vehicles, equipment, and worker vehicles would create visible contrast within the rural and primarily undeveloped (with the exception of two residences and residential accessory structures) setting of the project site. However, vehicles, equipment, and construction activity would be temporary in nature (12 to24 months) and would be limited to active areas of construction as opposed to the entirety of the project site at the same time.

Viewers are accustomed to seeing heavy machinery associated with the construction of other solar facilities in the area. In addition, the visual effects associated with the presence of construction vehicles, equipment, and workers in the project area landscape would be limited in duration and would be spatially limited at any given time to the active area of construction. Therefore, impacts to existing visual character or quality of the project site and surrounding area during construction of the project would be less than significant.

Operation

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

Visual simulations are provided in **Figures 4.1-2** through **4.1-6**. KOPs are described in **Table 4.1-2**, *Visual Simulation Methodology and Assumptions*. Impacts associated with operation of the project would vary by viewer location and are discussed below by KOP. The rating system and impacts methodology are discussed in the "Rating Visual Quality" section above.

The solar facility would introduce solar arrays into much of the project site. Battery containers, collection lines, an O&M building, storage yards, dirt or gravel access roads, up to 60-foot communication towers on the Chaparral Site and on the Rabbitbrush Site), and a 7-foot-high perimeter fence (6 feet of chain link with one foot of barbed wire on top) would be visible for an estimated lifespan of over 30 years, would be visible to residents, workers at nearby solar facilities, and travelers on surrounding roadways.

The O&M facility would include a building and a storage yard, which would be constructed to provide a base for ongoing operations and maintenance at the project site. The building would house electronic controls and communication systems; provide storage space for tools, maintenance supplies, and spare parts; and provide on-site facilities for the staff.

The aforementioned communication towers would introduce a tall vertical element into the landscape that would most likely be located next to the O&M facility and substation. Roads, driveways, and parking lot entrances would be constructed in accordance with Kern County improvement standards, would be consistent with existing roadways in the area, and would not greatly alter the visual landscape. Fences would be 7 feet tall (6 feet of chain link with one foot of barbed wire on top). The battery containers and other equipment which would comprise the energy storage systems (ESS) could introduce industrial-looking elements into the landscape that could be visible to sensitive viewers if viewers are located in proximity to these features and if terrain, vegetation, and the proposed solar modules do not obscure views of these features. In addition, collection lines are proposed to connect the project site to existing substations (built for the North Rosamond and Willow Springs Solar Project).

Solar modules would be made up of individual panels that would use either fixed-tilt or tracker technology. Each module would be up to 13 feet tall and have 18 inches of clearance between the bottom and the ground.

KOP 1. Figure 4.1-2, *KOP 1: Existing and Simulated Views from Hamilton Road and 100th Street West Looking Southwest Towards the Project Site*, shows views from the intersection of Hamilton Road and 100th Street West. This KOP reflects views to the project site that would be experienced by area residents located in proximity to the project site. At KOP 1, the project site is located 0.9 miles away. The pre-development views from KOP 1 shows that the landscape is relatively flat and covered with low-lying desert shrubs in the foreground and middle ground. Dark limited mountainous terrain of the San Gabriel Mountains is visible in the background to the southeast. No development is shown within this viewpoint. The post-development view from KOP 1 (see Figure 4.1-2) would include faint modifications (i.e., solar arrays) that would be located low in the middle ground landscape. The solar panels and associated elements would not be visible from KOP 1, and would not contrast with the existing muted earth tones in the foreground and background. As discussed in **Table 4.1-4**, *Visual Quality Rating Analysis – KOP 1*, the predevelopment score is 11, and the post-development score is 8. Since the difference in scores would be 3 points, visual impacts from KOP 1 are potentially significant.

KOP 2. Figure 4.1-3, *KOP 2: Existing and Simulated Views from Rosamond Boulevard and 135th Street West Looking Northeast towards the Project Site,* shows views from the intersection of Rosamond Boulevard and 135th Street West looking northeast toward the project site. This KOP accurately reflects views that motorists travelling along Rosamond Boulevard would experience as they pass the project site (located approximately 0.7 miles away). The pre-development views from KOP 2 depicts broad and flat terrain covered with mounded grey and brown shrubs and low golden grasses in the foreground and a tan fence located across Rosamond Boulevard. Telephone poles are visible along Rosamond Boulevard on the north side of the street. Tan hills rise from the otherwise flat terrain in the middle ground and low dark brown mountain range is visible in the distance. The post-development view from KOP 2 (see Figure 4.1-3) would not depict the solar arrays due to obstruction provided by the tan fence across Rosamond Boulevard. Solar arrays would not interrupt the long view across the valley terrain to the south and would not create noticeable color contrast. Moreover, the introduction of numerous collection line structures would not be clearly visible and would not increase the volume of straight, thin, vertical features present in the view. As discussed in **Table 4.1-5**, *Visual Quality Rating Analysis – KOP 2*, the pre-development score is 12, and the post-development score is also 12. Since the difference in scores would be 0 points, there would be no visual impacts experienced from KOP 2.

KOP 3. Figure 4.1-4, *KOP 3: Existing and Simulated Views from Rosamond Boulevard and 125th Street West Looking East towards the Project Site,* shows views from the intersection of Rosamond Boulevard and 125th Street West looking northeast toward the project site. This KOP accurately reflects views that motorists travelling along Rosamond Boulevard would experience as they pass the project site (located approximately 0.5 miles away). The pre-development views from KOP 3 depicts broad and flat terrain covered with mounded grey and brown shrubs and low golden grasses in the foreground and a tan fence located across Rosamond Boulevard. Telephone poles are visible along Rosamond Boulevard on the north side of the street. Tan hills rise from the otherwise flat terrain in the middle ground and low dark brown mountain range is visible in the distance. The post-development view from KOP 3 (see Figure 4.1-4) would not depict the solar arrays due to obstruction provided by the tan fence across Rosamond Boulevard. Solar arrays would not interrupt the long view across the valley terrain to the south and would not create noticeable color contrast. Moreover, the introduction of numerous collection line structures would not be clearly visible and would not increase the volume of straight, thin, vertical features present in the view. As discussed in **Table 4.1-6**, *Visual Quality Rating Analysis – KOP 3*, the pre-development score is 12, and the post-development score is also 12. Since the difference in scores would be 0 points, there would be no visual impacts experienced from KOP 3.

Existing View

Proposed View

FIGURE 4.1-2: KOP 1: EXISTING AND SIMULATED VIEWS FROM HAMILTON ROAD AND 100TH STREET WEST LOOKING SOUTHWEST TOWARDS THE PROJECT SITE

TABLE 4.1-4: VISUAL QUALITY RATING ANALYSIS – KOP 1

Sensitive Receptor: Residents located near the project site.
Pre-development and post-development conditions are depicted in Figure 4.1-2.

Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	2	1	1	Less than Significant
Explanation:	Relatively flat terrain covered with low-lying desert shrubs with limited mountainous terrain in the background.	The flat topography of the area would not be noticeably modified by project development except with installation of the collection line support structures.		
Detail:	Flat landforms dominate the foreground and middle ground of the visible landscape and mountains are elements of interest. The low height of solar arrays on the project site would not obstruct or substantially interrupt views of hills and mountains; however, the collection line support structures, while they would not obstruct views of interrupt views of the hills, would add to the view shed. There would be a less than significant impact to landforms resulting from project operations.			
Vegetation	3	3	0	No Impact
Explanation:	Low, mounded desert shrub vegetation; similar species present in the visible landscape.	Desert shrub vegetation would be removed from the solar sites in the middle ground, but effects would be obscured by distance.		
Detail:	Both the pre- and post-development views depict low, mounded desert shrub vegetation covering the valley floor. Removal of vegetation in the middle ground due to project development would not be noticeable due to distance. Contrast associated with vegetation removal would not be prominent, and as viewed from KOP 1, low and mounded desert shrub vegetation would continue to cover the valley. No impacts to vegetation would occur.			
Water	1	1	0	No Impact
Explanation:	No water is present on the site or in the vicinity.	Project development would not introduce water to or remove water from the visible landscape.		
Detail:	Water features are not included in pre- or post-development views. No impacts to water features would occur.			
Color	2	1	1	Less than Significant
Explanation:	Shades of brown, yellow, and green on the valley floor across the foreground and middle ground (associated with soil and vegetation). Grey associated with soil and distant mountains.	Solar arrays would display a low and thin black horizontal band in the middle ground. These colors would contrast with the muted earth tones in the foreground and middle ground.		

TABLE 4.1-4: VISUAL QUALITY RATING ANALYSIS – KOP 1

Sensitive Receptor: Residents located near the project site.
Pre-development and post-development conditions are depicted in Figure 4.1-2.

Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Detail:	Muted earth tones of brown, green and yellow dominate the foreground and middle ground. Slightly visible solar arrays would introduce a simple horizontal band of black color to the middle ground that would be easy to overlook. The lightly colored, vertical lines of collection line structures would be faint, but visibility would be enhanced on a clearer day with a blue sky backdrop. Background colors would not be altered or substantially obstructed from view. Impacts associated with color would be less than significant.			
Adjacent Scenery	2	2	0	No Impact
Explanation:	Mountains to the southeast enhance the view.	Mountains would remain visible and would not be substantially obstructed by project components.		
Detail:	The project would not modify, substantially obstruct, or interrupt views of adjacent scenery. Less-than-significant impacts to views of adjacent scenery would result.			
Scarcity	1	1	0	No Impact
Explanation:	The available view is broad. There are no unique aspects from this view. Similar views exist throughout the region.	Views would be slightly modified by industrial development in the middle ground.		
Detail:	Existing views offered from Hamilton Road are typical of the area. Visible features are not particularly unique or unusual. Alteration of the landscape to accommodate the project would not result in visually significant impacts to view scarcity.			
Cultural Modifications	0	-1	1	Less than Significant
Explanation:	Cultural modifications include transmission lines.	Project development would add low-profile solar arrays and faint, vertical collection line support structures to the project area.		
Detail:	Existing cultural modifications are not particularly prominent, and the features are compatible with rural elements in the surrounding area. Project components would be added to the landscape, but due to the low form and dark color of solar arrays and the faint lines associated with the collection line, the addition of cultural modifications to the middle ground of KOP 1 would result in less-than-significant impacts.			
Totals:	**11**	**8**	**3**	**Potentially Significant**

Existing View

Proposed View

FIGURE 4.1-3: KOP 2: EXISTING AND SIMULATED VIEWS FROM ROSAMOND BOULEVARD AND 135TH STREET WEST LOOKING NORTHEAST TOWARDS THE PROJECT SITE

TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS – KOP 2

Sensitive Receptor: Motorists on Rosamond Boulevard as they pass the project site, located approximately 0.7 miles away.

Pre-development and post-development conditions are depicted in Figure 4.1-3.

Rated Feature	Pre-development Score	Post-development Score	Difference in Scores	Impact Significance
Landform	3	3	0	No Impact
Explanation:	Broad and flat terrain in the foreground with tan hills in the middle ground and a tan fence located across Rosamond Boulevard.	Project development would not visibly modify the area's topography as viewed from the KOP.		
Detail:	The pre- and post-development view is dominated by flat valley terrain in the foreground, tan hills to the southeast in the middle ground and a tan fence obscuring views across Rosamond Boulevard. There would be no view of the project from this KOP. As such, Project development would not noticeably modify landforms in the view.			
Vegetation	3	3	0	No Impact
Explanation:	Low and mounded desert shrub vegetation covers the foreground and no vegetation is visible beyond the tan fence located across Rosamond Boulevard.	Vegetation removal would be obscured from view due to the intervening fence and the normal viewing angle to the project site available at KOP 2.		
Detail:	Removal of vegetation in the middle ground due to project development would not be visible. Solar arrays installed on the project site would not be detectable in views. Resulting contrast would not be noticeable, and therefore, no impacts to vegetation would occur			
Water	1	1	0	No Impact
Explanation:	No water is visible on site or in the surrounding area.	Project development would not introduce water to or remove water from the visible landscape.		
Detail:	Water features are not included in pre- or post-development views. No impacts to water features would occur.			
Color	2	2	0	No Impact
Explanation:	Shades of yellow, green and brown are display by soil and vegetation, which dominate the foreground. A tan fence is located across Rosamond Boulevard and low dark brown mountains rise from the valley. Development is grey, black, and tan.	The dark color of solar arrays would be obscured by the tan fence located across Rosamond Boulevard and would not contrast with the drab tones displayed by terrain and vegetation in the foreground. The light greyish color of collection line support poles and lines would have a minimal visual impact. Color contrast would not change with project operation.		
Detail:	Pre- and post-development views are and would continue to be dominated by earth tones. The dark line displayed by solar arrays would not be noticeable in views, but would be similar in tone to the color displayed by low mountains in the view.			

TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS – KOP 2

Sensitive Receptor: Motorists on Rosamond Boulevard as they pass the project site, located approximately 0.7 miles away.

Pre-development and post-development conditions are depicted in Figure 4.1-3.

Rated Feature	Pre-development Score	Post-development Score	Difference in Scores	Impact Significance
Adjacent Scenery	2	2	0	No Impact
Explanation:	Views of the flat desert terrain are enhanced by hills and mountains to the south.	Hills and mountains would remain visible. Fencing (which would obscure the view of solar arrays) would not block hills or mountains from view.		
Detail:	The project would not modify, substantially obstruct, or interrupt views of adjacent scenery. No impact to views of adjacent scenery would result.			
Scarcity	1	1	0	No Impact
Explanation:	The eastern extent of the broad view is limited by middle ground hills. There are no particularly unique or unusual aspects in the view, and similar views are present throughout the region. minimal	The middle ground would be modified by the introduction of solar arrays and the collection line and support poles. Solar arrays would not be visible beyond the tan fence located across Rosamond Boulevard. The collection line and support poles would be constructed parallel to Rosamond boulevard, however, there are existing lines and poles parallel to Rosamond Boulevard. The proximity of existing solar and wind development to the project site creates similarly modified views in the area.		
Detail:	The view from Rosamond Boulevard is typical of views available throughout the area and landforms and vegetation are not particularly unique or unusual. Landscape modification resulting from project development would result in minimal impact to view scarcity.			
Cultural Modifications	0	0	0	No Impact
Explanation:	Cultural modifications include paved roads, electrical transmission lines, and a tan fence across Rosamond Boulevard.	Project development would add low-profile and dark solar arrays, regularly spaced and vertical collection line support structures, and horizontal collection lines to the project area. Solar arrays would not be visible from this view. Collection line support structures and horizontal collection lines would have a minimal visual impact.		

TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS – KOP 2

Sensitive Receptor: Motorists on Rosamond Boulevard as they pass the project site, located approximately 0.7 miles away.

Pre-development and post-development conditions are depicted in Figure 4.1-3.

Rated Feature	Pre-development Score	Post-development Score	Difference in Scores	Impact Significance
Detail:	A tan fence is visible across Rosamond Boulevard. The introduction of solar arrays would not be evident behind the existing tan fence. Collection line support structures and horizontal collection lines would have a minimal visual impact. Therefore, the addition of cultural modifications to the middle ground of KOP 2 would not be visible and would result in no impacts			
Totals:	**12**	**12**	**0**	**No Impact**

Existing View

Proposed View

FIGURE 4.1-4: KOP 3: EXISTING AND SIMULATED VIEWS FROM ROSAMOND BOULEVARD AND 125TH STREET WEST LOOKING NORTHEAST TOWARDS THE PROJECT SITE

TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3

Sensitive Receptor: Motorists on Rosamond Boulevard and residents located near the project site.
Pre-development and post-development conditions are depicted in Figure 4.1-4.

Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	3	3	0	No Impact
Explanation:	Broad and flat terrain in the foreground with tan hills in the middle ground and a tan fence located across Rosamond Boulevard.	Project development would not visibly modify the area's topography as viewed from the KOP.		
Detail:	The pre- and post-development view is dominated by flat valley terrain in the foreground, tan hills to the southeast in the middle ground and a tan fence obscuring views across Rosamond Boulevard. There would be no view of the project from this KOP. As such, Project development would not noticeably modify landforms in the view.			
Vegetation	3	3	0	No Impact
Explanation:	Low and mounded desert shrub vegetation covers the foreground and no vegetation is visible beyond the tan fence located across Rosamond Boulevard.	Vegetation removal would be obscured from view due to the intervening fence and the normal viewing angle to the project site available at KOP 3.		
Detail:	Removal of vegetation in the middle ground due to project development would not be visible. Solar arrays installed on the project site would not be detectable in views. Resulting contrast would not be noticeable, and therefore, no impacts to vegetation would occur			
Water	1	1	0	No Impact
Explanation:	No water is visible on site or in the surrounding area.	Project development would not introduce water to or remove water from the visible landscape.		
Detail:	Water features are not included in pre- or post-development views. No impacts to water features would occur.			
Color	2	2	0	No Impact
Explanation:	Shades of yellow, green and brown are display by soil and vegetation, which dominate the foreground. A tan fence is located across Rosamond Boulevard and low dark brown mountains rise from the valley. Development is grey, black, and tan.	The dark color of solar arrays would be obscured by the tan fence located across Rosamond Boulevard and would not contrast with the drab tones displayed by terrain and vegetation in the foreground. The light greyish color of collection line support poles and lines would not be visible. Color contrast would not change with project operation.		
Detail:	Pre- and post-development views are and would continue to be dominated by earth tones. The dark line displayed by solar arrays would not be noticeable in views, but would be similar in tone to the color displayed by low mountains in the view.			

TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3

Sensitive Receptor: Motorists on Rosamond Boulevard and residents located near the project site.
Pre-development and post-development conditions are depicted in Figure 4.1-4.

Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Adjacent Scenery	2	2	0	No Impact
Explanation:	Views of the flat desert terrain are enhanced by hills and mountains to the south.	Hills and mountains would remain visible. Fencing (which would obscure the view of solar arrays) would not block hills or mountains from view.		
Detail:	The project would not modify, substantially obstruct, or interrupt views of adjacent scenery. No impact to views of adjacent scenery would result.			
Scarcity	1	1	0	No Impact
Explanation:	The eastern extent of the broad view is limited by middle ground hills. There are no particularly unique or unusual aspects in the view, and similar views are present throughout the region.	The middle ground would be modified by the introduction of solar arrays and the collection line, but these modifications would not be visible beyond the tan fence located across Rosamond Boulevard. The proximity of existing solar and wind development to the project site creates similarly modified views in the area.		
Detail:	The view from Rosamond Boulevard is typical of views available throughout the area and landforms and vegetation are not particularly unique or unusual. Landscape modification resulting from project development would result in no impact to view scarcity.			
Cultural Modifications	0	0	0	No Impact
Explanation:	Cultural modifications include paved roads, electrical transmission lines, and a tan fence across Rosamond Boulevard.	Project development would add low-profile and dark solar arrays, regularly spaced and vertical collection line support structures, and horizontal collection lines to the project area. However, these additions would not be visible from this view.		
Detail:	A tan fence is visible across Rosamond Boulevard. The introduction of solar arrays would not be evident behind the existing tan fence. Therefore, the addition of cultural modifications to the middle ground of KOP 3 would not be visible and would result in no impacts			
Totals:	**12**	**12**	**0**	**No Impact**

KOP 4. Figure 4.1-5, *KOP 4: Existing and Simulated Views from the Intersection of 115th Street West and Rosamond Boulevard Looking East towards the Project Site*, shows views from the intersection of 115th Street West and Rosamond Boulevard looking east towards the project site (located just west of the Chaparral Solar Site). This KOP accurately reflects views to the project site that motorists travelling on Rosamond Boulevard and nearby residents would experience. The pre-development views from KOP 4 depict relatively flat terrain with low shrubs and Rosamond Boulevard visible in the foreground and more low shrubs, grass, development and power poles and electrical lines visible in the middle ground. The background includes views of tan hills and faint views of mountain ranges can be seen in the distance. The post-development view from KOP 4 (see Figure 4.1-5) would include relatively small modifications (i.e., solar arrays) that would be located low in the middle ground landscape. As discussed in **Table 4.1-7**, *Visual Quality Rating Analysis – KOP 4*, the pre-development score is 10, and the post-development score is 4. Since the difference in scores would be 6 points, visual impacts from KOP 4 are potentially significant.

KOP 5. Figure 4.1-6, *KOP 5: Existing and Simulated Views from Kildeer Street and Rosamond Boulevard Looking Northwest towards the Project Site*, shows views from the intersection of Kildeer Street and Rosamond Boulevard looking northwest towards the project site (located approximately 1-mile away). This KOP accurately reflects views to the project site experienced by motorists on Rosamond Boulevard and residents located near the project site. The pre-development views from KOP 5 depict relatively flat terrain covered with low and mounded tan and green desert shrubs in the foreground. Several tan hills in the middle-ground are visible, and larger, hazy dark gray and blue mountains are detectable in the background to the west. Existing cultural modifications in the view consist of dirt roads and paved roads in the foreground (Kildeer Street and Rosamond Avenue), as well as wind turbines, utility poles, and utility wires in the middle-ground. The post-development view from KOP 5 (Figure 4.1-6) would primarily consist of repeating rows of dark solar modules as well as collection line and support structures in the middle-ground of this viewpoint. As discussed in **Table 4.1-8**, *Visual Quality Rating Analysis – KOP 5*, the pre-development score is 11, and the post-development score is 7. Since the difference would be 4 points, visual impacts from KOP 5 are potentially significant.

Factors Reducing Visual Impacts

The following attributes of the project and elements of the existing conditions would reduce visual impacts of the project:

- The project site is generally flat and would reduce the need for grading and visible alteration of landforms.
- The lack of scenic designation of local roads in the immediate project area reduces viewer sensitivity and expectations for scenic landscapes.
- Solar panels, the primary feature of the project, would cover most of the land on the site and would generally be 13 feet in height or less. Therefore, solar panels would not block long-distance views and would be diminished when viewed from 0.5 miles or farther.
- Solar panels do not create significant levels of glare, as explained in Impact 4.1-3, below.
- Minimal onsite lighting would be required during operations, as explained in Impact 4.1-4, below. Facilities would not operate at night, and no regular nighttime staffing would be required.

Existing View

Proposed View

FIGURE 4.1-5: KOP 4: EXISTING AND SIMULATED VIEWS FROM THE INTERSECTION OF 115TH STREET WEST AND ROSAMOND BOULEVARD LOOKING EAST TOWARDS THE PROJECT SITE

TABLE 4.1-7: VISUAL QUALITY RATING ANALYSIS – KOP 4

Sensitive Receptor: Motorists on Rosamond Boulevard and residents located near the project site.
Pre-development and post-development conditions are depicted in Figure 4.1-4.

Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	2	1	1	Less than Significant
Explanation:	Relatively flat terrain covered with low-lying desert shrubs with limited mountainous terrain in the background.	The flat topography of the area would not be noticeably modified by project development except with installation of the collection line support structures.		
Detail:	Flat landforms dominate the foreground and middle ground of the visible landscape and mountains are elements of interest. The low height of solar arrays on the project site would not obstruct or substantially interrupt views of hills and mountains; however, the collection line support structure, while it would not obstruct views or interrupt view of the hills, would add to view shed. There would be a less than significant impact to landforms resulting from project operations.			
Vegetation	3	2	1	Less than Significant
Explanation:	Low and mounded desert shrubs cover the foreground and middle ground terrain.	The development of solar modules and other components would replace existing desert shrubs; however, removal of vegetation is not visible from this viewpoint.		
Detail:	The visual effects of vegetation removal would generally be masked by solar arrays on the project site. Therefore, no impacts to vegetation would occur.			
Water	0	0	0	No Impact
Explanation:	No water is visible on site or in the surrounding area.	Project development would not introduce water to or remove water from the visible landscape.		
Detail:	Water features are not included in pre- or post-development views. No impacts to water features would occur.			
Color	2	1	1	Less than Significant
Explanation:	Foreground and middle-ground vegetation and terrain display shades of yellow, green, and brown. The hills in the middle ground are tan while the mountains ns in the background are hazy dark grey/blue.	Dark grey/blue and metallic grey colors displayed by solar modules and steel support poles would be introduced to the project site, but occupy portions of the middle ground and are only faintly visible from this viewpoint.		
Detail:	The foreground and middle ground are dominated by shades of yellow, green, and brown. Solar modules and support poles, which are visible within the middle ground on the project site would display dark grey/blue and metallic grey colors that would contrast with the characteristic drab color of desert terrain and vegetation. As such, color contrast would be weak due to project site distance from KOP 4.			

TABLE 4.1-7: VISUAL QUALITY RATING ANALYSIS – KOP 4

Sensitive Receptor: Motorists on Rosamond Boulevard and residents located near the project site.
Pre-development and post-development conditions are depicted in Figure 4.1-4.

Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Adjacent Scenery	2	2	0	No Impact
Explanation:	Views are moderately enhanced by conical hills and low dark mountains in the background.	Hills and mountains would remain visible. Solar arrays, fencing, collection line components, and other project components, which are visible from this viewpoint, would not block hills or mountains from view.		
Detail:	Visibility of hills and mountains would not be altered by project development. No impacts would occur.			
Scarcity	2	1	1	Less than Significant
Explanation:	There are no particularly unique or unusual aspects in the view. Conical hills add interest to the scene but are visible throughout the local area.	Views would be slightly modified by industrial development in the middle ground.		
Detail:	Views of conical hills are available in other locations and are not unique to KOP 4, and project development would not substantially affect the availability of long views to hilly terrain in the local area. Therefore, impacts to view scarcity would be less than significant.			
Cultural Modifications	-1	-3	2	Potentially Significant
Explanation:	Cultural modifications include telephone poles as well as paved and dirt roads.	Solar arrays and associated structures would be introduced to the middle ground, and would be visible from KOP 4.		
Detail:	Cultural modifications include telephone poles as well as paved and dirt roads. The project would introduce solar development and ancillary components to the middle ground. Solar arrays, the collection line and structures and other project components would attract attention and create form, line, and color contrast. These project components are visible from this viewpoint. Visual impacts associated with cultural modifications would be potentially significant.			
Totals:	**10**	**4**	**6**	**Potentially Significant**

Existing View

Proposed View

FIGURE 4.1-6: KOP 5: EXISTING AND SIMULATED VIEWS FROM KILLDEER STREET AND ROSAMOND BOULEVARD LOOKING NORTHWEST TOWARDS THE PROJECT SITE

TABLE 4.1-8: VISUAL QUALITY RATING ANALYSIS – KOP 5

Sensitive Receptor: Motorists on Rosamond Boulevard and Residents Located Near the Project Site
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:	Flat terrain in the foreground with hills in the middle-ground and background. Tan hills in the middle-ground to the north and larger, darker hills in the background to the west.	Project development would not visibly modify the areas topography as viewed from the KOP.		
Detail:	Flat landforms occupy the foreground. Tan hills occupy the middle-ground landscape to the north and larger hill silhouettes occupy background landscape to the west. Solar arrays, collection line structures, and other components would be faintly visible in the middle-ground, but would not prominent. The project would not substantially alter or modify existing landforms in the view.			
Vegetation	3	2	1	Less than Significant
Explanation:	Low and mounded desert shrubs cover the foreground and middle ground terrain.	The development of solar modules and other components would replace existing desert shrubs in the middle ground. Foreground desert shrubs as viewed from this KOP would not be affected.		
Detail:	The visual effects of vegetation removal in the middle ground would appear minor as viewed from this KOP. Therefore, impacts to views of vegetation would be less than significant.			
Water	0	0	0	No Impact
Explanation:	No water is visible on site or in the surrounding area.	Project development would not introduce water to or remove water from the visible landscape.		
Detail:	Water features are not included in pre- or post-development views. No impacts to water features would occur.			
Color	2	1	1	Less than Significant
Explanation:	Foreground and middle-ground vegetation and terrain display shades of yellow, green, and brown. The hills in the middle-ground are tan while the hills in the background are hazy dark grey/blue. Linear disturbance associated with local roads development adds light tan and gray tones to the view.	Dark grey/blue and metallic grey colors displayed by solar modules and steel support poles would be introduced, but occupy portions of the middle ground and are only faintly visible from this viewpoint.		

TABLE 4.1-8: VISUAL QUALITY RATING ANALYSIS – KOP 5

Sensitive Receptor: Motorists on Rosamond Boulevard and Residents Located Near the Project Site
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
Detail:	The foreground and middle ground are dominated by shades of yellow, green, and brown. Solar modules and support poles, which are faintly visible within the middle ground would display dark grey/blue and metallic grey colors that would contrast with the characteristic drab color of desert terrain and vegetation. As such, color contrast would be weak due to project site distance from KOP 5.			
Adjacent Scenery	2	2	0	No Impact
Explanation:	Views are moderately enhanced large hills in the background to the west and tan hills in the middle-ground to the north.	Hills would remain visible. Solar arrays, fencing, collection line components, and other project components, which are faintly visible from this viewpoint, would not block hills from view.		
Detail:	Visibility of hills would not be altered by project development. No impacts would occur.			
Scarcity	2	1	1	No Impact.
Explanation:	Tan hills add interest to the scene but are visible throughout the local area.	Views would be slightly modified by industrial development in the middle ground, but would not affect long views of hills.		
Detail:	Views of hills are available in other locations and are not unique to KOP 5, and project development would not substantially affect the availability of long views to hilly terrain in the local area. Therefore, impacts to view scarcity would be less than significant.			
Cultural Modifications	-1	-2	1	Less than Significant
Explanation:	Cultural modifications include fencing, wind turbines, utility poles and wires, as well as paved and dirt roads.	Solar arrays and associated structures would be introduced to the middle ground, but would be faintly visible from KOP 5.		
Detail:	Cultural modifications include fencing, wind turbines, utility poles and wires, as well as paved and dirt roads. The project would introduce solar development and ancillary components to the middle ground. Solar arrays and other project components would attract attention and create form, line, and color contrast. These project components would be faintly visible from this KOP, but would be placed between existing utility poles in the foreground and wind turbines in the background, adding further discord to the environment. Visual impacts associated with cultural modifications would be less than significant.			
Totals:	**11**	**7**	**4**	**Potentially Significant**

Summary

As shown in **Tables 4.1-4** through **4.1-8**, implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. As shown in the visual simulations, the visual change associated with project development would be somewhat muted when viewed from a distance of greater than 0.5 miles. With distance, the effects associated with removal of vegetation from the project site would be masked by dense groupings of solar arrays. Similarly, thousands of solar arrays viewed from distance would begin to appear similar to other dark tones associated with distant terrain in the landscape. However, visual change would be evident from Rosamond Boulevard. Even with distance and diminished visibility, the visual change associated with the introduction of approximately 1,406 acres of solar development on currently undeveloped desert terrain (with the exception of two residences and residential accessory structures) would likely attract attention. Further, the introduction of thousands of solar panels, the O&M facilities, the energy storage facilities, and the collection lines supported by up to 75-foot-high structures would increase the footprint of solar and electrical transmission development in the Rosamond area. Solar and other renewable energy developments are generally concentrated to the west of SR-14, and the project would introduce additional manufactured elements where they do not currently dominate the landscape, resulting in significant aesthetic impacts.

Mitigation Measures MM 4.1-1 through MM 4.1-4 would reduce visual impacts associated with the proposed project by limiting vegetation removal, planting native vegetation, providing privacy fencing, reducing the visibility of project features, and ensuring that the site is kept free of debris and trash. Native vegetation would be left in place around the proposed project area where feasible, allowing for a natural screening of project components. Furthermore, the color treatment of buildings would help these components to better blend in with the natural landscape.

However, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped desert landscape character of the project site, impacts to visual resources would remain significant and unavoidable.

Mitigation Measures

MM 4.1-1: Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program shall be submitted for review and approval to the Kern County Planning and Natural Resources Department. The program shall include, but not be limited to the following:

a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities.

b. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.

c. The project proponent/operator shall implement a regular trash removal and recycling program on an ongoing basis during construction and operation of the project. Barriers

to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.

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

MM 4.1-2: The project proponent shall install metal fence slats or similar view-screening materials, as approved by the Kern County Planning and Natural Resources Department, in all on-site perimeter fencing for any portion of the solar site that is adjacent to parcels zoned for residential use, including E (Estate Residential), R-1 (Low-Density Residential), R-2 (Medium-Density Residential), R-3 (High-Density Residential), or PL (Platted Lands) zoning unless the adjacent property is owned by the project proponent (to be verified by the Kern County Planning and Natural Resources Department) or a public or private agency that has submitted correspondence to the Kern County Planning and Natural Resources Department requesting this requirement to be waived. Should the project proponent sell the adjacent property, slat fencing or similar view-screening materials shall be installed prior to the sale.

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

MM 4.1-4: Wherever possible, within the proposed project boundary the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the proposed project boundary shall remain in place. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department for review and approval. The plan shall include the measures detailed below.

a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants (including Mohave creosote scrub habitat) and/or allowed to re-vegetate with the existing native seed bank in the top soil where possible to establish revegetation. Areas that contain permanent features such as perimeter roads, maintenance roads or under arrays do not require revegetation.

b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, and (4) a clear prohibition of the use of toxic rodenticides.

c. Ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish re-vegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural

Resources Department prior to planting. Phased seeding may be used if a phased construction approach is used (i.e., the entire site need not be seeded all at the same time).

d. Vegetation/ground cover shall be continuously maintained on the site by the project operator.

e. The re-vegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during the three-year periods, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for each of the three years. Should efforts to revegetate with the existing native seed bank in the top soil prove in the second year to not be successful by 75 percent cover rate, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department and an additional year shall be added to the monitoring program to ensure coverage is achieved. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the proposed project, where feasible.

Level of Significance after Mitigation

Impacts would be significant and unavoidable.

Impact 4.1-4: The project would create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area.

Regarding night lighting and daytime glare conditions, "light" refers to artificial light emissions, or the degree of brightness, generated by a given source. Regarding glare conditions, the Illuminating Engineering Society of North America (IES, 2000) defines "glare" as the sensation produced by luminance in the visual field that is sufficiently greater than the luminance to which the eye has adapted to cause annoyance, discomfort, or loss of visual performance and visibility.

Construction

Lighting

According to the County's Noise Ordinance, construction is allowed during the hours of 6:00 a.m. to 9:00 p.m. Monday through Friday and 8:00 a.m. to 9:00 p.m. on weekends. Construction of the project would generally occur during daytime hours; however, non-daylight hours may be necessary at times to make up for unanticipated schedule delays or to complete critical construction activities. In the event that work is performed between the hours of 9:00 p.m. to 6:00 a.m., construction crews would use minimal illumination in order to perform the work safely. All lighting would be directed downward and shielded to focus illumination on the desired work areas only, and to prevent light spillage onto adjacent properties. During construction, dusk-to-dawn security lighting would be required for the temporary construction staging area, parking area, construction office trailer entries, and project site access points. Lighting is not planned for typical construction activities because construction activities would occur primarily during daylight. Per Mitigation Measure MM 4.1-5, any nighttime construction would use lighting designed to

provide the minimum illumination needed, thereby minimizing adverse impacts on any nearby residents. As a result, construction of the project would result in less-than-significant impacts to nighttime views.

Glare

Most of the proposed construction activities are planned to occur during daylight hours. Increased truck traffic and the transport of the solar arrays and construction materials to the project site and transmission lines would temporarily increase glare conditions during construction. However, this increase in glare would be minimal and temporary. Construction activity would occur on focused areas of the project site as construction progresses and any sources of glare would not be stationary for a prolonged period of time. Additionally, the surface area of construction equipment would be minimal compared to the scale of the site. Therefore, construction of the project would not create a new source of substantial glare that would affect daytime views in the area and impacts would be less than significant.

Operation

Lighting

As described in Chapter 3, *Project Description*, night lighting will be installed for security and maintenance needs at the main access entrances, O&M Building(s), substations (as necessary), and major equipment enclosures. The O&M Building(s) and any substation lighting will be controlled by motion sensors, by a control switch accessible within the site control center or as required by code. Maintenance of the plant may be necessary during nighttime hours. In this event, portable, directional lighting would be utilized for the work areas. The solar field would not require lighting. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Additionally, lighting would be directed downward and shielded to focus illumination on the desired areas only and to minimize light trespass in accordance with applicable County requirements. Potential operational impacts associated with new sources of lighting at the solar sites would be minimized through compliance with applicable development standards pertaining to lighting, including Chapter 19.81 (Dark Skies Ordinance), as required with implementation of Mitigation Measure MM 4.1-5, which states that projects would be designed to provide the minimum illumination needed to achieve safety and security objectives. Therefore, implementation of Mitigation Measure MM 4.1-5 and compliance with applicable local development standards and regulations pertinent to lighting would minimize the potential for light trespass onto adjacent properties and roads, and impacts would be less than significant.

Glare

Potential new sources of glare would be produced by sunlight reflecting off the glass surfaces of the solar modules. Although solar facility glare potential is much lower than is commonly perceived, solar panels have the potential to create some glare. Although the project may produce glare, it is not expected to cause extreme visual discomfort or impairment of vision for residents because the panels are designed to absorb as much sunlight as possible and, therefore, would have minimal reflectivity. Similarly, and also due to their low reflectivity, the panels would not be expected to cause visual impairment for motorists on area roadways. This is because local motorists would pass well under the angle of refraction (i.e., less than 30 degrees). Effects on eastbound motorists would likely be greatest in the early evening hours, when the sun is at its lowest arc in the western horizon. Glare would have its greatest impact on westbound travelers in the early morning hours, when the sun is rising in the east. To reduce glare potential, the project would be

required to implement Mitigation Measures MM 4.1-5 through MM 4.1-7, which require the use of non-reflective and glare-minimizing materials. With implementation of these mitigation measures, impacts would be less than significant.

Mitigation Measures

MM 4.1-5: Prior to commencement of project operations of the solar facility, the project proponent shall demonstrate to Kern County Planning and Natural Resources Staff that the project site complies with the applicable provisions of the *Dark Skies Ordinance* (Chapter 19.81 of the Kern County Zoning Ordinance), and shall be designed to provide the minimum illumination needed to achieve safety and security objectives. All lighting shall be directed downward and shielded to focus illumination on the desired areas only and avoid light trespass into adjacent areas. Lenses and bulbs shall not be exposed or extend below the shields.

MM 4.1-6: Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department.

MM 4.1-7: Prior to commencement of project operations of the solar facility, the project operator shall demonstrate that all onsite buildings utilized non-reflective materials, as approved by the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, impacts would be less than significant.

Cumulative Setting Impacts and Mitigation Measures

As shown in **Table 3-4**, *Cumulative Project List*, there are 145 projects in the area including several utility-scale solar and wind energy production facilities. These have already created impacts on the sense of open areas generally associated with the California desert area as well as removing iconic types of vegetation, such as Joshua Trees, that attract people to locate in desert communities and is contrary to various goals of the County to promote tourism in the desert area. The size and scope of already existing development of over 30,000 acres of solar projects are increased by the proposed project, and there are increased by the proposed project and there are cumulative impacts to aesthetics when considered together with the project. Unobstructed views of regional topographical features and undeveloped lands would no longer be available as acreage is developed with solar projects that would contain PV panels and new transmission lines, and would be unavailable for any other use for the 20- to 30-year lifespan of these large-scale solar projects.

The project would result in significant and unavoidable impacts related to visual character despite implementation of mitigation. While other projects in the region would also be required to implement

various mitigation measures to reduce impacts, the conversion of thousands of acres in a presently rural desert area to solar energy production uses cannot be mitigated to a degree that impacts are no longer significant. Even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7, the project's contribution to significant impacts associated with visual character in the Antelope Valley would be cumulatively significant and unavoidable.

Mitigation Measures

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

Level of Significance after Mitigation

Cumulative impacts would be significant and unavoidable.

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Section 4.2
Agriculture and Forestry Resources

4.2.1 Introduction

This section of the EIR describes the affected environment and regulatory settings for agriculture and forest resources for the project. It also describes the impacts on agricultural and forest resources that would result from the implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. This section is based, in part, on information provided in the *Kern County Agricultural Crop Report* (2019) prepared by the Department of Agriculture and Measurement Standards along with the AVEP Solar Project 10-year Farming History Memos for the Chaparral and Rabbitbrush Solar Facilities prepared by First Solar (2019), located in Appendix B (Appendix B-1 and Appendix B-2, respectively) of this EIR.

4.2.2 Environmental Setting

Regional Setting

Kern County covers approximately 8,163 square miles (5,224,258 acres) including 1,384 square miles (885,957 acres) of harvested agricultural land and approximately 2,889 square miles (1,849,266 acres) of grazing land. According to the 2019 Kern County Agricultural Crop Report, agriculture in Kern County was worth approximately $7.6 billion in 2019, which is an increase of 2 percent from the 2018 crop value (7.4 billion). The top five commodities for 2019 were almonds, grapes, citrus, milk, and pistachios, which made up more than $5.5 billion (72 percent) of the total value, with the top twenty commodities making up approximately 95 percent of the total value (Department of Agriculture and Measurement Standards, 2019).

Kern County is a growing population and like many agricultural based jurisdictions, must balance urbanization and the loss of farmland. As shown in **Table 4.2-1,** *Agricultural Land Use Designation 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 General Plans and Housing Element Annual Progress Report, 2018). (Note: These various farmland designations are defined in Section 4.2.3, *Regulatory Setting*, below).

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

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

SOURCE: Kern County General Plans and Housing Element Annual Progress Report, 2018.

According to Kern Economic Development Corporation (KEDC), it is estimated that the total population of Kern County will reach approximately 1,213,558 individuals in 2040, growing from 2019's population of approximately 916,464 (KEDC, 2019). The anticipated growth in population will most likely decrease the amount of agricultural land in Kern County even further. However, it is important to note, the conversion of agricultural land is affected by numerous factors other than population growth and urban development. Actual production is dependent on commodity prices, water prices and supply, labor, the proximity of processing and distribution facilities, and pest management. Factors such as weather, trade agreements, and labor disputes can also affect decisions regarding what crops are grown and which lands go in and out of production. Most conversion of Prime or Farmland of Statewide Importance agricultural lands is occurring within the planned development footprint of Metropolitan Bakersfield. Very little conversion of the most productive agricultural lands has occurred in outlying areas of the County.

Local Setting

Project Site Designation

The project site is located within unincorporated Kern County on approximately 1,406 acres of undeveloped (with the exception of two residences and residential accessory structures), privately owned land and within the administrative boundaries of the Willow Springs Specific Plan. As previously stated in Chapter 3, *Project Description*, the proposed project consists of two sites: Chaparral Solar Facility and Rabbitbrush Solar Facility which are 774 acres and 632 acres in size, respectively. The project site is currently designated as follows by the Willow Springs Specific Plan: 2.1 (Seismic Hazard Overlay), 4.4 (Comprehensive Planning Area), 5.3 (Maximum 10 units/net acre), 5.6 (Maximum 2.5 gross acres/unit), 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 6.2 (general Commercial) and 8.5 (Resource Management, minimum 20-acre parcel site). See **Figure 3-4**, *Existing Willow Springs Specific Plan Designations*, and **Figure 3-6**, *Existing Zoning*, of Chapter 3, *Project Description*. Additionally, the project site is zoned agricultural or estate residential, and has combining districts of floodplain, residential suburban and/or geologic hazard as specified in **Table 3-2**, *Project Site and Surrounding Land Uses*, of Chapter 3, *Project Description*.

The project site is located within the boundaries of Agricultural Preserve No. 24, the project site is primarily vacant and undeveloped (with the exception of two residences and residential accessory structures), and the Chaparral Solar Facility and Rabbitbrush Solar Facility do not support agricultural uses, past or present. As depicted in **Figure 4.2-1,** *Farmland Mapping and Monitoring Program Designations*, the project site is not designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance within the Chaparral and/or Rabbitbrush Solar Facilities. The California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) 2018 Important Farmland Map, designates the project site as "Nonagricultural and Natural Vegetation" and "Semi-Agricultural and Rural Commercial Land." Surrounding properties are designated as either: "Nonagricultural and Natural Vegetation", "Urban and Built-up Land", "Rural Residential Land", "Grazing Land", "Semi-Agricultural and Rural Commercial Land", or "Prime Farmland" (DOC California Important Farmland Finder, 2018b).

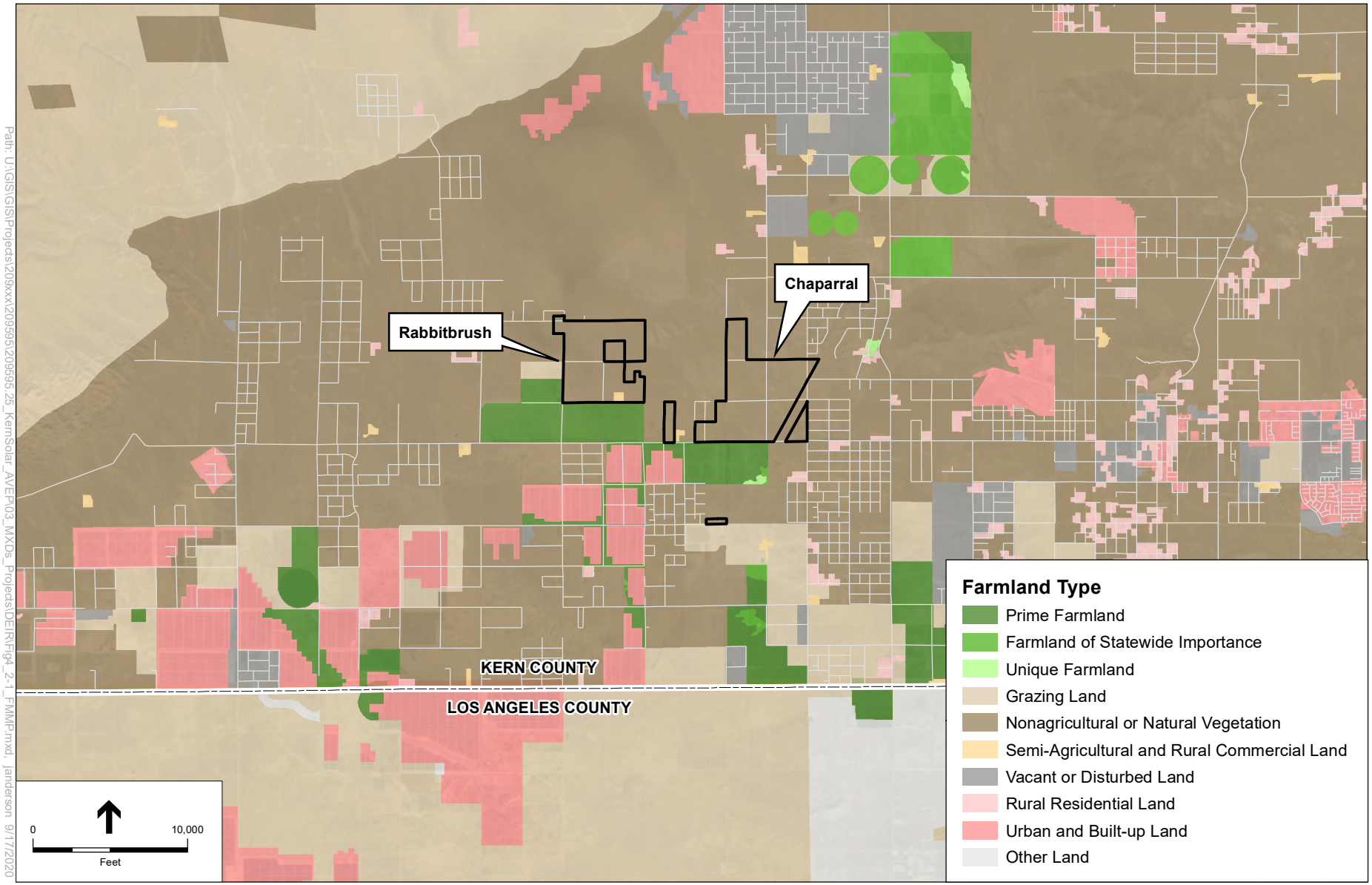

FIGURE 4.2-1: FARMLAND MAPPING AND MONITORING PROGRAM DESIGNATIONS

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 of Local Importance. Farmland that is subject to FPPA requirements does not have to be currently used as cropland. It can be forestland, pastureland, or other land but not urban and built-up land or water. FPPA assures that, to the extent possible, federal programs are administered to be compatible with State, and local units of government, and private programs and policies to protect farmland.

In 1981, Congress passed the Agriculture and Food Act (Public Law 97-98) which contained the FPPA, Subtitle I of Title XV, Sections 1539-1549. The final rules and regulations were published in the Federal Register on June 17, 1994. Federal agencies are required to develop and review their policies and procedures related to implementing the FPPA every 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 (Natural Resources Conservation Service [NRCS], 2019).

State

California Department of Conservation (DOC), Division of Land Resource Protection

The DOC applies the NRCS soil classifications to identify agricultural lands. These agricultural designations are used in planning for the present and future of California's agricultural land resources. The DOC uses a minimum mapping unit of 10 acres; parcels that are smaller than 10 acres are absorbed into the surrounding classifications.

The list below describes the categories mapped by the DOC (DOC California Important Farmland Finder, 2018b) 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-tern agricultural production Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

- **Farmland of Statewide Importance.** Farmland that is similar to Prime Farmland but with minor shortcomings, such as greater slopes or lower moisture content. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Unique Farmland.** Land with lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include land that supports non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been used for crops at some time during the 4 years prior to the mapping date.
- **Farmland of Local Importance.** Land that is important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups with an interest in grazing activities.
- **Urban and Built-Up Land.** Land that is developed with structures that have been built to a density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land supports residential, industrial, commercial, institutional, public administrative uses; railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment facilities; water control structures; and other developed uses.
- **Other Land.** Land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Undeveloped and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act (California Government Code Section 51200-51297.4), and is applicable to specific parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under a Williamson Act contract. The Williamson Act program is administered by the DOC, in conjunction with local governments that administer the individual contract arrangements with landowners. Participation in the Williamson Act program is dependent on County adoption and implementation of the program and is voluntary for landowners (DOC, 2019b).

Under the Williamson Act, a landowner commits the parcel to a 10-year period, during which time no conversion out of agricultural use is permitted. In return, the land is taxed at a rate based on the actual use (i.e., agricultural production), as opposed to its unrestricted market value. Each year the contract automatically renews unless a notice of nonrenewal or cancellation is filed. However, the application to cancel must be consistent with the criteria of the affected county or city. Nonrenewal or contract cancellation does not change a property's zoning. Participation in the Williamson Act program, which is voluntary for landowners, is dependent on a county's willingness to adopt and implement the program. The Williamson Act states that a board or council will, by resolution, adopt rules governing the administration of agricultural preserves. The rules of each agricultural preserve specify the allowed uses. Generally, any commercial agricultural use would be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted under a permit (DOC, 2019b).

California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Also Section 51238 states that board of supervisors may impose conditions on lands or land uses to be placed within preserves to permit and encourage compatible uses, in conformity with Section 51238.1. Furthermore, under California Government Code Section 51238.1, a board or council may allow any use that without conditions or mitigations would otherwise be considered incompatible. However, this may occur only if that use meets the following conditions:

- The use would not significantly compromise the long-term agricultural capability of the subject contracted parcel or parcels on other contracted lands in agricultural preserves;
- The use would not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping; and
- The use would not result in the significant removal of adjacent contracted land from agricultural or open-space use.

Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act. It was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy in the State. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this act, a landowner who is already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35 percent reduction in the taxable value of land and improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses.

Public Resources Code Section 21060.1

Public Resources Code Section 21060.1 uses the FMMP to define agricultural land for the purposes of assessing environmental impacts. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and analyze the conversion of such lands. The FMMP provides analysis pertaining to agricultural land use changes throughout California.

Local

Kern County General Plan

The Kern County General Plan states that agriculture is vital to the future of Kern County and sets goals to protect important agricultural lands for future use and prevent the conversion of prime agricultural lands to other uses (e.g., industrial or residential). The Kern County General Plan includes four (4) designations for agricultural land:

- **8.1 Intensive Agriculture (minimum parcel size 20 acres gross)** – Lands devoted to the production of irrigated crops or having potential for such use.

  Uses shall include, but are not limited to, the following: Irrigated cropland; orchards; vineyards; horse ranches; raising of nursery stock ornamental flowers and Christmas trees; fish farms' bee keeping' ranch and farm facilities and related uses; one single-family dwelling unit; cattle feed yards; dairies; dry land farming; livestock grazing; water storage; groundwater recharge acres; mineral; aggregate; and petroleum exploration and extraction; hunting clubs; wildlife preserves; farm labor housing; public utility uses; and agricultural industries pursuant to provisions of the Kern County Zoning Ordinance, and land within development areas subject to significant physical constraints.

- **8.2 Resource Reserve (minimum parcel size is 20 acres gross, except to a Williamson Act Contract/Farmland Security Zone Contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands devoted to areas of mixed natural resource characteristics including rangeland, woodland, and wildlife habitat which occur in an established County water district.

- **8.3 Extensive Agriculture (minimum parcel size 20 acres gross, except lands subject to a Williamson Act contract/Farmland Security Zone contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands devoted to uses involving large amounts of land with relatively low value-per-acre yields such as livestock grazing, dry-land farming, and woodlands.

- **8.5 Resource Management (minimum parcel size 20 acres gross, except lands subject to a Williamson Act contract/Farmland Security Zone contract, in which case the minimum parcel size shall be 80 acres gross)** – Lands consisting primarily of open space containing important resource values, such as wildlife habitat, scenic values, or watershed recharge areas. These areas may be characterized by physical constraints, or may constitute an important watershed recharge area or wildlife habitat or may have value as a buffer between resource areas and urban areas. Other lands with this resource attribute are undeveloped, non-urban areas that do not warrant additional planning within the foreseeable future because of current population (or anticipated increase), marginal physical development, or no subdivision activity.

  Additionally, the designation of 8.5 (Resource Management) can be used for agricultural uses such as dry-land farming and ranch facilities.

The policies, goals, and implementation measures in the Kern County General Plan for agricultural resources applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the proposed project. Therefore, they are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference (Kern County, 2009).

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

1.9 Resource

Goals

Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.

Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential for future use.

Goal 5: Conserve prime agriculture lands from premature conversion.

Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

Policies

Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of general plan designation.

Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.

Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.

Implementation Measure

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

Willow Springs Specific Plan

The entire project site (approximately 1,406 acres) occurs within the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in 1992 and amended in 2008 as part of the Land Use, Open Space, and Conservation Element of the Kern County General Plan. Its goals, policies, and standards are compatible with those of the General Plan, but are tailored to the particular needs of the expanded Willow Springs area. The purpose of the Willow Springs Specific Plan is to define the planning requirements of a designated area to ensure orderly development (Kern County, 2008).

The Willow Springs Specific Plan includes the following policies related to agriculture and forest resources:

Resource Element

Goals

Goal 3 Encourage retention of productive agricultural and dormant mineral resources by imposing a restriction on allowing urban type land uses on nearby adjacent lands.

Policies

Policy 1 Provide a method encouraging the preservation of agricultural land

Policy 18 Initial development within the Update area shall, when possible, be directed towards previously impacted areas (i.e., agricultural fields).

Kern County Zoning Ordinance

The Kern County Zoning Ordinance establishes basic regulations under which land is developed. This includes allowable uses, building setback requirements, and development standards. Pursuant to state law, the zoning ordinance must be consistent with the Kern County General Plan. The basic intent of the Kern County Zoning Ordinance is to promote and protect the public health, safety, and welfare via the orderly regulation of the land uses throughout the unincorporated area of the county. The zoning ordinance applies to all property in unincorporated Kern County, except land owned by the United States or any of its agencies.

As previously mentioned in Chapter 3, *Project Description*, and as described in 4.2.2, *Local Setting*, the Kern County Zoning Ordinance designates the project site for agricultural or estate residential uses, and has combining districts of floodplain, residential suburban and/or geologic hazard.

Williamson Act Standard Uniform Rules

Kern County has adopted a set of rules that identify compatible land uses within agricultural preserves established under the Williamson Act. The rules restrict uses on such land to agricultural or other compatible uses. Agricultural uses include crop cultivation, grazing commercial wind farms, livestock breeding, dairies, and uses that are incidental to these uses. Other compatible agricultural uses include those associated with public utilities (e.g., gas, electric, communications, water, and other similar public utilities). For purposes of this analysis, the conversion of agricultural land to a solar facility itself would be incompatible with the farming provisions necessary for projects under Williamson Act contracts. Therefore, a proposed solar project on contracted land would be required by Kern County to petition for an early cancellation of the contract. However, the project site does not contain lands under an active Williamson Act contract and, therefore, is not subject to these rules.

4.2.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts on agriculture and forest resources have been evaluated on a qualitative basis by reviewing the *Kern County Agricultural Crop Report* (2018), the 2018 DOC California Important Farmland Map, and the AVEP Solar Project 10-year Farming History Memos for the Chaparral and Rabbitbrush Solar Facilities prepared by First Solar, located in Appendix B-1 and Appendix B-2 of this EIR, respectively. A change in land use would normally be determined to be significant if the effects described in the thresholds of significance were to occur (see CCR Title 14, Section 15064.7(a)). The evaluation of project impacts is based on a thorough analysis of the Kern County General Plan's applicable goals and policies related to agricultural resources, professional judgment, and the significance criteria established by CEQA.

Thresholds of Significance

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

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;

b. Conflict with existing zoning for agricultural use or Williamson Act Contract;

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104 (g).

d. Result in the loss of forestland or conversion of forest land to non-forest use.

e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use; or

f. Result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15206(b)(3) Public Resources Code.

Project Impacts

Impact 4.2-1: The project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.

As previously mentioned, the project site includes the Chaparral Solar Facility (774 acres) and the Rabbitbrush Solar Facility (632 acres). The project would not directly or indirectly impact farmland at the Chaparral Solar Facility and the Rabbitbrush Solar Facility, considering the project site is primarily vacant, undeveloped (with the exception of two residences and residential accessory structures), and does not support agricultural uses, past or present. There is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project area that includes the Chaparral and the Rabbitbrush Solar Facilities. The DOC FMMP 2018 California Important Farmland Finder, designates the Chaparral Solar Facility as "Nonagricultural and Natural Vegetation" (774 acres) and the Rabbitbrush Solar Facility as "Nonagricultural and Natural Vegetation" (622 acres) and "Semi-Agricultural and Rural Commercial" (10 acres). Surrounding properties are designated as either: "Nonagricultural and Natural Vegetation", "Urban and Built-up Land", "Rural Residential Land", "Semi-Agricultural and Rural Commercial", "Grazing Land" or "Prime Farmland" (DOC California Important Farmland Finder, 2018b).

Although adjacent properties include agricultural designates, as referenced above, activities of the proposed project's Chaparral and Rabbitbrush Solar Facilities would be temporary and primarily contained within the sites' boundaries and would not result in significant construction or operation activity along surrounding properties. As previously indicated, the project site that includes the Chaparral Solar Facility and the

Rabbitbrush Solar Facility is not considered to be prime, unique, or important farmland. Construction and/or operation of the project at the Chaparral and the Rabbitbrush Solar Facilities is not anticipated to result in the conversion of designated Farmland to a nonagricultural use as the facilities are FMMP designated as "Nonagricultural and Natural Vegetation" and "Semi-Agricultural and Rural Commercial." Therefore, impacts of the proposed project related to converting designated farmland to nonagricultural use at the Chaparral and the Rabbitbrush Solar Facilities would be less than significant.

At the end of the proposed project's operational term (approximately 30 years), the project proponent may determine that the project site should be decommissioned and remove the system and its components. 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 project site would be returned to a state adaptable to agriculture. Therefore, for the reasons described above, the development of solar facilities (Chaparral Solar Facility and Rabbitbrush Solar Facility) 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

Implement Mitigation Measure MM 4.11-1. (See Section 4.11, *Land Use and Planning*, for full mitigation text.)

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.11-1, impacts would be less than significant.

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

The project site is located within Kern County Agricultural Preserve No. 24. According to available data, none of the parcels included as part of the proposed project or any other property in the immediate vicinity of the project are subject to a Williamson Act Land Use contract (First Solar, 2019; Appendix B-1 and B-2). The closest Williamson Act land is located approximately 0.85 miles northwest of the Rabbitbrush Solar Facility and 1.6 miles southeast of the Chaparral Solar Facility. As depicted in **Figure 4.2-1,** *Farmland Mapping and Monitoring Program Designations*, the Chaparral and Rabbitbrush Solar Facilities are not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The project site is zoned agricultural or estate residential, and has combining districts of floodplain, residential suburban and/or geological hazard. The project would not conflict with existing zoning for agricultural use. Furthermore, included in the proposed project are zone change requests, to rezone to A (Exclusive Agriculture) all portions of the site which are not currently zoned A (Exclusive Agriculture), including the parcel of the Chaparral site located at the northwest corner of Holiday Avenue and 110th Street West. According to the Kern County Zoning Ordinance, a commercial solar energy generating facility is a compatible use in the exclusive agriculture zone district. Pursuant to Kern County Zoning Ordinance, Chapter 19.12.030.G, the construction and operation of a solar energy generating facility, when not accessory to a permitted or conditionally permitted use, on the project site would require the approval of a Conditional Use Permit. The proposed discretionary actions are consistent with the Kern County Zoning Ordinance regulations for solar uses.

In addition, the potential for future farming activities is limited due to the basin groundwater adjudication status. 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, 2019). 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 stabilizing or even possibly rising (Todd Groundwater, 2019). According to the 2018 Annual Report, the amount of groundwater in storage for the Basin as a whole was calculated to have increased by 1,312 acre-feet (AF) from 2018 to 2019; 10,710 AF from 2017 to 2018; and 53,761 AF from 2016 to 2017 (Todd Groundwater, 2019).

Given the fact that the project proponent is seeking approval of zone change requests to rezone property to A (Exclusive Agriculture), to allow for compatibility with the proposed solar energy development pursuant to Kern County Zoning Ordinance, Chapter 19.12.030.G, implementation of this project is not expected to conflict with existing agricultural use. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.2-3: The project would conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

As previously mentioned in Chapter 3, *Project Description*, of this EIR, the project site is entirely within the Willow Springs Specific Plan and is currently designated as 2.1 (Seismic Hazard Overlay), 4.4 (Comprehensive Planning Area), 5.3 (Maximum 10 units/net acre), 5.6 (Maximum 2.5 gross acres/unit), 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 6.2 (general Commercial) and 8.5 (Resource Management, minimum 20-acre parcel site). As such, the project site and land within the vicinity of the proposed project is not zoned as forest land, timberland, or lands zoned for timberland production. Additionally, the project site is zoned agricultural or estate residential, and has combining districts of floodplain, residential suburban and/or geologic hazard. The project site is located within the boundaries of Agricultural Preserve No. 24, the project site is primarily vacant and undeveloped (with the exception of two residences and residential accessory structures), and the Chaparral Solar Facility and Rabbitbrush Solar Facility do not support agricultural uses, past or present. In addition, according to the Kern County Zoning Ordinance Chapter 19.12.030.G, the construction and operation of a solar energy generating and battery storage facility on the project site would require the approval of Conditional Use Permits. The proposed discretionary actions are consistent with the Kern County Zoning Ordinance regulations for solar uses.

Given that the project site is not zoned for forest land, timberland, or timberland production, the project is not anticipated to conflict with existing zoning, and therefore, no impact would occur.

Mitigation Measures

No mitigation would be required.

Level of Significance

No impact.

Impact 4.2-4: The project would result in the loss of forestland or conversion of forest land to non-forest use.

The project is not situated on forest land and would not convert forest land to non-forest uses. There is no land in the vicinity of the project that is zoned as forest land, timberland, or lands zoned for timberland production. Due to a lack of forest land on the site, the project does not involve any changes to the existing environment that, due to their location or nature, could result in impacts resulting in the loss of forest land or conversion of forest land to non-forest use. Therefore, there are no anticipated impacts related to the rezoning of forest land or conversion of forest land to a non-forest use and therefore no impact related to the loss of forestland would occur.

Mitigation Measures

No mitigation would be required.

Level of Significance

No impact.

Impact 4.2-5: The project would involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use.

As previously mentioned, the project site is primarily vacant and undeveloped at the Chaparral Solar Facility and Rabbitbrush Solar Facility (with the exception of two residences and residential accessory structures), which do not support agricultural uses, past or present.

At the end of the proposed project's operational term (approximately 30 years), the project proponent may determine that the project site should be decommissioned. 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*. Upon decommissioning of the Facilities, the project site would be returned to a state adaptable to agriculture use. 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

Implement Mitigation Measure MM 4.11-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.11-1, impacts would be less than significant.

Impact 4.2-6: The project would result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 acres or more (Public Resources Code Section 15206(b)(3)).

The project site is not subject to an open space contract made pursuant to the California Land Conservation Act of 1965 or the Farmland Security Zone Contract. As stated above, the project site is not under a Williamson Act Contract, and therefore impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The geographic scope for cumulative agricultural and forest impacts is considered the western Antelope Valley. This geographic scope was selected because the land within the region possesses relatively similar agricultural opportunities, soil conditions, climate, and water availability. As shown in **Table 3-4**, *Cumulative Projects List*, of Chapter 3, *Project Description*, there are 145 cumulative projects proposed or approved (117 in Kern County and 28 in Los Angeles County), including some utility-scale solar production facilities.

Of the approximately 117 total projects in Kern County, 34 would be located in grazing land and none would be located on Prime Farmland nor Farmland of Statewide Importance; and thus would not contribute to a cumulative loss of farmland.

As previously discussed, construction and operation of the project would develop a solar facility on land zoned for agricultural uses, however, the land does not currently support agricultural uses and the project will not result in the conversion of existing agricultural land to nonagricultural uses. As such, cumulative impacts would be less than significant.

Similar to the proposed project, other energy projects in Kern County are 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 the site would be available again for agricultural use, 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. Therefore, the proposed project's contribution to cumulative impacts related to agriculture in Kern County would be less than cumulatively considerable.

Mitigation Measures

Implement Mitigation Measure MM 4.11-1.

Level of Significance

Cumulative impacts would be less than significant.

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Section 4.3
Air Quality

4.3.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of the project and evaluates the short- and long-term air quality impacts associated with development of the site. Further, this analysis describes the affected environment and regulatory setting for air quality. Where necessary, mitigation measures are included to avoid or lessen the impacts of the proposed project.

Information in this section is based primarily on the Air Quality/Greenhouse Gas Technical Documentation located in Appendix C of this EIR, including the *Air Quality/Greenhouse Gas Assessment AVEP Solar* (MBI, 2020a) located in Appendix C-1, the *San Joaquin Valley Air Pollution Control District (SJVAPCD) and South Coast Air Quality Management District (SCAQMD) Amicus Curiae Brief* located in Appendix C-2 and *Health Risk Assessment AVEP Solar* (MBI, 2020b) located in Appendix D of this EIR. The report was prepared in accordance with the Kern County Planning Department's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports (Kern County, 2006) and Eastern Kern Air Pollution Control District's (EKAPCD) Guidelines for Implementation of the California Environmental Quality Act (CEQA) (EKAPCD, 1999).

4.3.2 Environmental Setting

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic drainage features. The project site is located in the Mojave Desert Air Basin (MDAB) and is under the jurisdiction of EKAPCD. The MDAB includes the eastern half of Kern County, the northern part of Los Angeles County, most of San Bernardino County except for the southwest corner, and the eastern edge of Riverside County. It is separated from the South Coast Air Basin, to its south, by the San Gabriel and San Bernardino Mountains. It is separated from the San Joaquin Valley, to the northwest, by the Tehachapi Mountains and the south end of the Sierra Nevada.

Topography and Meteorology

Air pollution, especially the dispersion of air pollutants, is directly related to a region's topographic features. Air quality is a function of both the rate and location of pollutant emissions and the meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects ambient air quality.

The project is located within the Antelope Valley, approximately 5.5 miles west of the City of Rosamond, in the southeast potion of unincorporated Kern County. The Antelope Valley is within the western portion of the Mojave Desert and is bounded by the Tehachapi Mountains to the northwest and the San Gabriel Mountains to the southwest. Land uses in the project area include undeveloped desert, fallow and active agriculture, low-density residences, and energy development (e.g., solar and wind). The Mojave Desert is

bordered on the southwest by the San Bernardino Mountains, separated from the San Gabriel Mountains by the Cajon Pass (4,200 feet above mean sea level [amsl]). A lesser valley lies between the San Bernardino Mountains and the Little San Bernardino Mountains (the Morongo Valley). The Palo Verde Valley portion of the Mojave Desert lies in the low desert, at the eastern end of a series of valleys (notably the Coachella Valley) whose primary channel is the San Gorgonio Pass (2,300 feet amsl) between San Bernardino and San Jacinto Mountains.

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 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 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 recorded in the Rosamond – Lancaster area, range from a low of 31 degrees Fahrenheit (°F) in December to highs of 98°F in July and August (MBI, 2020a). Rainfall is light, averaging about seven inches a year in Lancaster (MBI, 2020a). The Basin averages between three and seven inches of precipitation per year (from 16 to 30 days with at least 0.01 inch of precipitation). The Basin 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 considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Residences, schools, hospitals, convalescent homes, and parks are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The project consists of two non-contiguous Facilities, the Rabbitbrush Solar Facility (125 megawatts [MW]) and the Chaparral Solar Facility (125 MW) totaling approximately 1,406 acres of private lands. Additionally, the existing Rosamond and Willow Springs substations will be improved as a direct result of project implementation. As these properties are non-contiguous, they have differing sensitive receptors. Existing development in the project vicinity includes rural access roads, scattered rural residences, and wind and solar energy. Residences are located at varying distances in all directions from all four locations. There are no

known non-residential sensitive receptors located within 2 miles of the project site. The closest residential receptors for each property include the following:

- **Rabbitbrush Solar Facility:** 170 feet west at 130th Street W, directly adjacent east at APNs 358-152-06-4 and 358-152-07-2[1] (with development approximately 170 feet to the east), and 900 feet southwest at 11936 Rosamond Boulevard
- **Chaparral Solar Facility:** 120 feet east at 3022 100th Street W, and 165 feet east at 3300 100th Street W.
- **Rosamond Substation:** 480 feet south at 13956 W Rosamond Boulevard
- **Willow Springs Substation and potential Chaparral ESS Parcel located at the northwest corner of Holiday Avenue and 110th Street West:** 2,250 feet northwest, a residence located just northeast of the Abarth Avenue and 117th Street intersection

Ambient Air Quality Standards

National and State Standards

Regulation of air pollution is achieved through both federal and State ambient air quality standards and permitted emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the United States Environmental Protection Agency (EPA) 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, EPA has set "primary" and "secondary" ambient standards for each of the criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

Regional and Local Standards

NAAQS establish the level for an air pollutant above which detrimental effects to public health or welfare may result. NAAQS are defined as the maximum acceptable concentrations that, depending on the pollutant, may not be equaled or exceeded more than once per year or in some cases as a percentile of observations. California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (i.e., California Ambient Air Quality Standards [CAAQS]).

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

[1] APN's 358-152-06-04 and 358-152-07-2 do not have registered street addresses and are classified as vacant lots per the Kern County Assessor-Recorder. However, based off Google Earth imagery, these parcels of land have development on-site. Thus, it is conservatively assumed in this analysis that these parcels of land have sensitive receptors on-site.

attainment status for each of these standards within the EKAPCD jurisdiction. If a pollutant concentration in an area is lower than the established standard, the area is classified as being in "attainment" for that pollutant. If the pollutant concentration meets or exceeds the standard (depending on the specific standard for the individual pollutants), the area is classified as a "nonattainment" area. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified."

TABLE 4.3-1: NATIONAL AND STATE CRITERIA POLLUTANT STANDARDS AND EASTERN KERN AIR POLLUTION CONTROL DISTRICT ATTAINMENT STATUS

		California Standards		National Standards	
Pollutant	**Averaging Time**	**Concentration**	**Attainment Status**	**Primary**	**Attainment Status**
Ozone (O_3)	1-hour	0.09 ppm	Non-Attainment	—	Non-Attainment (Marginal)[b]
	8-hour	0.070 ppm		0.070 ppm[a]	
Particulate Matter (PM_{10})	AAM[c]	20 µg/m^3	Non-Attainment	–	Unclassified/ Attainment
	24-hour	50 µg/m^3		150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	Unclassified	12.0 µg/m^3	Unclassified/ Attainment
	24-hour	No Standard		35 µg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	Unclassified	35 ppm	Unclassified/ Attainment
	8-hour	9.0 ppm		9 ppm	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	0.053 ppm	Unclassified
	1-hour	0.18 ppm		100 ppb[d]	
Sulfur Dioxide (SO_2)	24-hour	0.04 ppm	Attainment	0.14 ppm	Unclassified
	3-hour	–		0.5 ppm	
	1-hour	0.25 ppm		75 ppb	
Lead	30-day Average	1.5 µg/m^3	Attainment	—	Unclassified/ Attainment
	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)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	Unclassified		

[a] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
[b] No federal 1-hour standard (revoked as of June 15, 2004).
[c] AAM = annual arithmetic mean
[d] To attain this standard, the 3-year average of the 98th percentile daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).

SOURCE: CARB, 2016; EKAPCD, 2018.

As shown in **Table 4.3-1**, *National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District Attainment Status*, the EKAPCD is currently classified as non-attainment for the one-hour State ozone standard as well as non-attainment for the national and State eight-hour ozone standards. Additionally, the EKAPCD is classified as non-attainment for the State 24-hour PM_{10} standard. The EKAPCD is currently in attainment and/or unclassified status for all other ambient air quality standards. California has also established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles; however, air emissions of these pollutants are not expected to occur under the project and thus, these pollutants are not addressed further in this EIR.

Local Air Quality

To assess localized CO impacts, the significance thresholds are based on the state CO standards, shown previously in **Table 4.3-1**, *National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District Attainment Status*, which are 20 parts per million (ppm) for 1-hour CO concentration levels and 9 ppm for 8-hour CO concentration levels. If CO concentration levels with the project would be less than the standards, then there would be no significant impact on local air quality. If future CO concentrations with the project would be above the standards, then the increase due to the project would determine if the impact would be significant or less than significant. A project would have a significant impact on local air quality if the project would result in an increase of 1 ppm or more 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 (APCDs) and air quality management districts to monitor ambient pollutant levels. The SLAMS network in Kern County consists of eight stations that monitor various pollutant concentrations. The locations of these stations were chosen to meet monitoring objectives, which, for the SLAMS network, call for stations that monitor the highest pollutant concentrations, representative concentrations in areas of high population density, the impact of major pollution emissions sources, and general background concentration levels.

The EKAPCD is responsible for monitoring air quality in the Kern County portion of the MDAB to determine whether pollutant concentrations meet State and national air quality standards. The nearest air monitoring station to the project site is the Mojave air monitoring station, located approximately 15 miles northeast of the project site. The Mojave monitoring station monitors ambient concentrations of ozone, lead, SO_2, PM_{10} and $PM_{2.5}$. CO and NO_2 data was obtained from the Bakersfield Municipal Airport monitoring station as that is the closest station that monitors for these pollutants. Ambient monitoring data obtained for 2016 through 2018 is summarized below in **Table 4.3-2**, *Air Quality Data Summary (2016–2018)*.

Criteria Air Pollutants

The following is a general description of the physical and health effects from the governmentally regulated air pollutants shown in **Table 4.3-1**, *National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District Attainment Status*.

TABLE 4.3-2: AIR QUALITY DATA SUMMARY (2016–2018)

	Monitoring Year		
Pollutant	**2016**	**2017**	**2018**
Ozone (O_3)[a]			
Maximum concentration (1-hour average)	0.104	0.097	0.111
Number of days State/national 1-hour standard exceeded	2/0	1/0	8/0
Maximum concentration (8-hour average)	0.093	0.083	0.095
Number of days State/national 8-hour standard exceeded	60/52	37/35	56/53
Nitrogen Dioxide (NO_2)[b]			
Maximum concentration (1-hour average) (national/State)	0.0.58	0.062	0.057
Number of days State/national standard exceeded	0/0	0/0	0/0
Suspended Particulate Matter ($PM_{2.5}$)[a]			
Maximum concentration (24-hour)	25.7	26.9	39.0
Number of days national standard exceeded (state/national)	NA/0	NA/0	NA/2
Suspended Particulate Matter (PM_{10})[a]			
Maximum concentration (24-hour)	139.2	93.4	93.1
Number of days standard exceeded (state/national)	18/0	10/0	19/0
Carbon Monoxide (CO)[b]			
Maximum concentration (1-hour average)	1.44	1.85	1.95
Number of days 1-hour standard exceeded (state/national)	0/0	0/0	0/0
Maximum concentration (8-hour average)	1.1	1.0	1.3
Number of days 8-hour standard exceeded (state/national)	0/0	0/0	0/0

NOTES:
ppm = parts per million by volume, $\mu g/m^3$ = micrograms per cubic meter, NA = not available
[a] Based on ambient concentrations obtained from the Mojave air station.
[b] Based on ambient concentrations obtained from the Bakersfield Municipal Airport air station
SOURCE: MBI, 2020a.

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 reactive organic gases (ROG), oxides of nitrogen (NO_X), and sunlight to form. ROG and NO_X are emitted from various sources throughout Kern County. Significant ozone formation generally requires an adequate amount of precursors in the

atmosphere and several hours in a stable atmosphere with strong sunlight. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Ozone is a regional air pollutant, which is generated over a large area and transported and spread by the wind. As the primary constituent of smog, ozone is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, it is not emitted directly into the air by specific sources but is created by sunlight acting on other air pollutants (the precursors), specifically NO_X and ROG. Sources of precursor gases number in the thousands and include common sources such as consumer products, gasoline vapors, chemical solvents, and combustion byproducts of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. Thus, high ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Health Effects

While ozone in the upper atmosphere protects the earth from UV-B, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular diseases, are aggravated by exposure to high ozone levels.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation, lung tissue damage, and a reduction in the amount of air inhaled into the lungs. Health effects include potential increased susceptibility to respiratory infections and reduced ability to exercise. Health effects are more severe in people with asthma and other respiratory ailments. People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. Also, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures. Elevated ozone concentrations also reduce crop and timber yields, damage native plants, and damage materials such as rubber, paints, fabric, and plastics (CARB and American Lung Association of California, 2007).

Reactive Organic Gases (ROGs) and Volatile Organic Compounds (VOCs)

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including reactive organic gases (ROGs) and volatile organic compounds (VOCs), which include all hydrocarbons except those exempted by CARB. Therefore, ROGs are a set of organic gases based on State rules and regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted by Federal law. Both VOCs and ROGs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

Health Effects

The primary health effects of hydrocarbons result from the formation of ozone and its related health effects (see ozone health effects discussion above). High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate federal or California ambient air quality standards for ROG. Carcinogenic forms of ROG are considered toxic air contaminants (TACs). An example is benzene, which is a carcinogen. The health effects of individual ROGs are described under the "Toxic Air Contaminants" heading below.

Carbon Monoxide (CO)

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, which contributes more than 66 percent of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Health Effects

When inhaled, CO enters the bloodstream and binds more readily to hemoglobin, the oxygen-carrying protein in blood, than oxygen, thereby reducing the oxygen-carrying capacity of blood and reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. Exposure to CO can cause chest pain in heart patients, headaches, and reduced mental alertness. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and, with prolonged enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin in the blood. Exposure to elevated concentrations of CO weaken the heart's contractions and lower the amount of oxygen carried by the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome; and increased daily mortality rate (Fierro et al., 2001).

Oxides of Nitrogen (NO_X)

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 reacts 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], 2019).

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, the levels have been reduced significantly.

Health Effects

High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Health effects from exposure to emissions of SO_2 include aggravation of lung diseases, especially bronchitis, and constricting of breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. Short-term exposures of individuals to elevated SO_2 levels during moderate activity may result in health effects including breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other health effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 also is a major precursor to particulate matter that is 2.5 microns or less ($PM_{2.5}$), which is a significant health concern and a main contributor to poor visibility (see also the discussion of health effects of particulate matter).

SO_2 not only has a bad odor, but can irritate the respiratory system. Exposure to high concentrations for short periods of time can constrict the bronchi and increase mucous flow, making breathing difficult. SO_2 can also irritate the lung and throat at concentrations greater than 6 ppm in many people; impair the respiratory system's defenses against foreign particles and bacteria when exposed to concentrations less than 6 ppm for longer time periods; and enhance the harmful effects of ozone (combinations of the two gases at concentrations occasionally found in the ambient air appear to increase airway resistance to breathing).

SO_2 tends to have more toxic effects when acidic pollutants, liquid or solid aerosols, and particulates are also present. Effects are more pronounced among "mouth breathers," e.g., people who are exercising or who have head colds. These effects include:

- Health problems, such as episodes of bronchitis requiring hospitalization associated with lower-level acid concentrations;
- Self-reported respiratory conditions, such as chronic cough and difficult breathing, associated with acid aerosol concentrations (individuals with asthma are especially susceptible to these effects. The elderly and those with chronic respiratory conditions may also be affected at lower concentrations than the general population);
- Increased respiratory tract infections associated with longer term, lower level exposures to 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 easily injures many plant species and varieties, both native and cultivated. Some of the most sensitive plants include various commercially valuable pines, legumes, red and black oaks, white ash, alfalfa, and blackberry. The effects include:

- Visible injury to the most sensitive plants at exposures as low as 0.12 ppm for eight hours;
- Visible injury to many other plant types of intermediate sensitivity at exposures of 0.30 ppm for eight hours; and
- Positive benefits from low levels in a very few species growing on sulfur-deficient soils.

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

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

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

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 manmade materials and is a major cause of reduced visibility in many parts of the United States. Non-health related effects include reduced visibility and soiling of buildings.

Premature deaths linked to particulate matter are now at levels comparable to deaths from traffic accidents and secondhand smoke. One of the most dangerous pollutants, fine particulate matter (e.g., from diesel exhaust) not only bypasses the body's defense mechanisms and becomes embedded in the deepest recesses of the lung but also can disrupt cellular processes. Population-based studies in hundreds of cities in the United States and around the world have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks. Long-term studies of children's health conducted in California have demonstrated that particulate pollution may significantly reduce lung function growth in children (CARB and American Lung Association of California, 2007).

A recent study provides evidence that exposure to particulate air pollution is associated with lung cancer. This study found that residents who live in an area that is severely affected by particulate air pollution are at risk of developing lung cancer at a rate comparable to nonsmokers exposed to secondhand smoke. This study also found approximately 16 percent excess risk of dying from lung cancer due to fine particulate air pollution (Air & Waste Management, 2006).

Another study shows that individuals with existing cardiac disease can be in a potentially life-threatening situation when exposed to high levels of fine air pollution. Fine particles can penetrate the lungs and cause the heart to beat irregularly, or can cause inflammation, which could lead to a heart attack (Peters et al., 2001).

Attaining the California particulate matter standards would annually prevent about 6,500 premature deaths, or 3 percent of all deaths. These premature deaths shorten lives by an average of 14 years. This is roughly equivalent to the same number of deaths (4,200 to 7,400) linked to secondhand smoke in 2000. In comparison, motor vehicle crashes caused 3,200 deaths, and 2,000 deaths resulted from homicide. Attaining the California particulate matter and ozone standards would annually prevent 4,000 hospital admissions for respiratory disease, 3,000 hospital admissions for cardiovascular disease, and 2,000 asthma-related emergency room visits. Exposure to diesel particulate matter (DPM) causes about 250 excess cancer cases per year in California (Kern County, 2006).

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 (EPA, 2012).

This highly toxic metal has been used for many years in everyday products, and has been found to cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children six years old and under are most at risk, because their bodies are growing quickly.

If not detected early, children with high levels of lead in their bodies can suffer from:

- 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

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 the following acute health effects (USEPA, 2019:

- Acute exposure of humans to high levels of vinyl chloride via inhalation in humans has resulted in effects on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness.

- Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans. Acute exposure to extremely high levels of vinyl chloride has caused loss of consciousness; irritation to the lungs and kidneys; inhibition of blood clotting in humans; and cardiac arrhythmias in animals.
- Tests involving acute exposure of mice to vinyl chloride have shown high acute toxicity from inhalation exposure to the substance.

Long-term exposure to vinyl chloride concentrations has been linked with the following chronic health effects (USEPA 2019):

- 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, 2019):

- Several case reports suggest that male sexual performance may be affected by vinyl chloride. However, these studies are limited by lack of quantitative exposure information and possible co-occurring exposure to other chemicals.
- Several epidemiological studies have reported an association between vinyl chloride exposure in pregnant women and an increased incidence of birth defects, while other studies have not reported similar findings.
- Epidemiological studies have suggested an association between men occupationally exposed to vinyl chloride and miscarriages during their wives' pregnancies, although other studies have not supported these findings.
- Long-term exposure to vinyl chloride has also been identified as a cancer risk. Inhaled vinyl chloride has been shown to increase the risk of a rare form of liver cancer (angiosarcoma of the liver) in humans. Animal studies have shown that vinyl chloride, via inhalation, increases the incidence of angiosarcoma of the liver and cancer of the liver.

Visibility Reducing Particles

Visibility-reducing particles is a measure of visibility. CARB does not yet have a measurement method that is accurate or precise enough to designate areas in the State as being in attainment or nonattainment. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. Except for Lake County (which is designated to be in attainment), California's attainment status with respect to visibility-reducing particles is currently designated as unclassified.

Toxic Air Contaminants (TAC)

Toxic air contaminants (TACs), as known under the California Clean Air Act of 1988 (CCAA), are 10 pollutants have been identified through ambient air quality data as posing the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to brain and nervous system and respiratory disorders. CARB provides TAC emission inventories for only the larger air basins.

Sources include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners and motor vehicle exhaust. TACs do not have ambient air quality standards. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of the Act must prepare and submit toxic emission inventory plans and reports to CARB and periodically update those reports. While TACs do result in potential health risks for those exposed, the project would not emit TACs with the exception of diesel particulate matter, which, therefore, is the only TAC described further in this analysis.

Diesel Particulate Matter

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.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel-particle levels measured in California's air in 2000 could cause 540 "excess" cancers (beyond what would occur if there were no diesel particles in the air) in a population of one million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated similar cancer risks from diesel exhaust as those calculated by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs,

which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks (OEHHA – ALA, 2001).

Airborne Fungus (Coccidioides immitis)

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers, and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also more likely to contract Valley Fever. After the fungal spores have settled in the lungs, they change into a multicellular structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

Approximately 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms include fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps may develop on the skin. One important fact to mention is that these symptoms are not unique to Valley Fever and may be caused by other illnesses as well. Identifying and confirming this disease require specific laboratory tests such as: (1) microscopic identification of the fungal spherules in infected tissue, sputum or body fluid sample; (2) growing a culture of CI from a tissue specimen, sputum, or body fluid; (3) detection of antibodies (serological tests specifically for Valley Fever) against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin Test (called coccidioidin or spherulin), which indicate prior exposure to the fungus (Valley Fever Center for Excellence 2019). It should be noted that the incident rate for Valley Fever in Kern County in the project site area and within the MDAB is significantly less (at approximately 50 cases per 100,000 population) than the incident rate in Kern County within the San Joaquin Valley Air Basin, where the highest incidence rate within California occurs (at approximately 321 cases per 100,000 population) (California Department of Public Health, 2018 and Kern County Public Health Services Department, 2019).

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, 2019).

Table 4.3-3, *Range of Complications of Valley Fever Cases*, presents the range of Valley Fever complications based on information from the Valley Fever Center for Excellence.

TABLE 4.3-3: RANGE OF COMPLICATIONS OF VALLEY FEVER CASES

Infection Classification	Percent of Total Diagnosed Cases
No Complications	50–60 percent
Acute Pneumonia	40–50 percent
Chronic Progressive Pneumonia	5 percent
Pulmonary Nodules and Cavities	5–10 percent
Disseminated	1–5 percent

SOURCE: Valley Fever Center for Excellence, 2019.

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 (California Department of Conservation, 2000).

Coronavirus Disease 2019

Coronavirus Disease 2019 (COVID-19) is a new disease, caused by a novel (or new) human coronavirus that has not previously been seen in humans. The first known case of COVID-19 was confirmed in the United States on January 20, 2020 (Holshue, et al, 2020). There are many types of human coronaviruses, including some that commonly cause mild upper-respiratory tract illnesses. COVID-19 is a respiratory illness that can spread from person to person. According to the Center for Disease Control (CDC), older adults and people who have severe underlying medical conditions like heart or lung disease or diabetes seem to be at higher risk for developing more serious complications from COVID-19 illness. Symptoms may appear 2 to 14 days after the exposure to the virus and may include, but are not limited to: fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, and diarrhea (CDC, 2020a). According to the CDC, COVID-19 is believed to spread between people who are in close contact with one another (within about 6 feet) through respiratory droplets produced when an infected person coughs, sneezes, or talks (CDC, 2020b). COVID-19 research and causality is still in the beginning stages. A nationwide study by Harvard University found a linkage between long term exposure to PM2.5 (averaged

from 2000 to 2016) as air pollution and statistically significant increased risk of COVID-19 death in the United States (Harvard, 2020).

4.3.3 Regulatory Setting

In California, air quality is regulated by several agencies, including EPA, CARB, and local air districts such as the EKAPCD. Each of these agencies develops rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, some State and local regulations may be more stringent than federal regulations. The project site is located within the MDAB, which is under the jurisdiction of the EKAPCD.

Federal

U.S. Environmental Protection Agency

The principal air quality regulatory mechanism on the federal level is the CAA and in particular, the 1990 amendments to the CAA, and the NAAQS that it establishes. These standards identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants include ozone, CO, NO_2 (which is a form of NO_X), SO_2 (which is a form of SO_X), PM_{10}, $PM_{2.5}$, and lead. EPA 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. EPA's primary role at the State level is to oversee the State air quality programs. EPA 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 state implementation plan (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 APCD and air quality management districts (AQMDs) in the State ranks the data into high, intermediate and low priority categories. When considering the ranking, the potency, toxicity, quantity, volume and proximity of the facility to receptors are given consideration by an air district.

CARB also has on- and off-road engine emission-reduction programs that would indirectly affect the project's emissions through the phasing in of cleaner on- and off-road engines. Additionally, CARB has a Portable Equipment Registration Program that allows owners or operators of portable engines and associated equipment to register their units under a statewide program to operate their equipment which must meet specified program emission requirements, throughout California without having to obtain individual permits from local air districts. Since the project is not proposing to install any applicable stationary sources, the AB 2588 program would not apply to the project.

In 2007, CARB enacted a regulation for the reduction of DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles (13 CCR Article 4.8, Chapter 9, Section 2449). This regulation provides target emission rates for particulate matter and NO_X emissions for owners of fleets of diesel-fueled off-road vehicles. It applies to equipment fleets of three specific sizes, and the target emission rates are reduced over time with full implementation by 2023 for large and medium fleets and 2028 for small fleets.

Title V and Extreme Designation

Title V of the CAA, as amended in 1990, creates an operating permit program for certain defined sources. In general, owner/operators of defined industrial or commercial sources that emit more than 25 tons per year (tpy) of NO_X and ROG must process a Title V permit. In "Extreme Designation" areas, the definition of a major source which requires Title V permitting, changes from 25 tpy to 10 tpy. This change results in more businesses having to comply with Title V permitting requirements under the Extreme nonattainment designation.

Title V does not impose any new air pollution standards, require installation of any new controls on the affected facilities, or require reductions in emissions. Title V does enhance public and EPA participation in the permitting process and requires additional record keeping and reporting by businesses, which results in significant administrative requirements.

California Renewables Portfolio Standard Program

Established in 2002 under SB 1078 and accelerated by SB 107 [2006] and SB 2 [2011], California's Renewable Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. In 2015, SB 350 further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027. The California Public Utilities Commission (CPUC) and the California Energy Commission are jointly responsible for implementing the program. SCE is on track to meeting these obligations, and currently has contracts to generate 41.4 percent of its electricity from renewable resources by the year 2020 (California Public Utilities Commission, 2019). 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 60 percent by December 31, 2030.

California Air Toxics "Hot Spots" Information and Assessment Act (AB 2588)

Enacted in 1981, AB 2588 is a state-wide program that requires facilities that exceed recommended Office of Environmental Health Hazards Assessment (OEHHA) levels to reduce risks to acceptable levels. Typically, during construction and operation diesel trucks and/or equipment generate diesel emissions. Diesel exhaust is composed of particulate matter and gases that contain potentially cancer-causing substances. DPM emissions include over 40 substances listed by the EPA as hazardous air pollutants, and/or by CARB as TACs. CARB adopted a comprehensive diesel risk reduction plan in 2000 with a goal of reducing DPM emissions associated with health risk by 85 percent by 2020.

California State Implementation Plan

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The EPA has the responsibility to review all State Implementation Plans to determine if they conform to the requirements of the CAA. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the EPA for approval and publication in the Federal Register. As discussed below, the *EKCAPCD 2017 Ozone Attainment Plan* informs the District's portion of the SIP.

Local

Kern County General Plan

The goals, policies, and implementation measures in the Kern County General Plan (Kern County, 2009) applicable to air quality as related to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the proposed project. Therefore, they are not listed below.

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

Air Quality

Policies

Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.

Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, will ensure that:

(1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and

(2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.

Policy 21: The County shall support air districts efforts to reduce 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:

1. Minimizing idling time.
2. Electrical overnight plug-ins.

Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:

1. Pave dirt roads within the development.
2. Pave outside storage areas.
3. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
4. Use of alternative fuel fleet vehicles or hybrid vehicles.
5. Use of emission control devices on diesel equipment.
6. Develop residential neighborhoods without fireplaces or with the use of
7. Environmental Protection Agency certified, low emission natural gas fireplaces.
8. Provide bicycle lockers and shower facilities on site

9. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
10. The use and development of park and ride facilities in outlying areas.
11. Other strategies that may be recommended by the local Air Pollution Control Districts.

Measure J: The County should include PM_{10} control measures as conditions of approval for subdivision maps, site plans, and grading permits.

Chapter 5. Energy Element

Solar Energy Development

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Willow Springs Specific Plan

The project site is located within the Willow Springs Specific Plan (KCPD, 2008). The Willow Springs Specific Plan was adopted in 1992 (most recently revised on April 1, 2008) and includes policies and implementation measures to ensure compatibility of land uses and minimize air quality impacts. The following summarizes the policies and implementations measures from the Willow Springs Specific Plan that are applicable to the project.

Land Use Element

Goal

Goal 1: The Willow Springs Specific Plan will regulate developments to ensure compatible uses of land consistent with both short- and long-term planning objectives of this Specific Plan area.

Policies

Policy 2: Encourage only those industries that do not significantly increase air pollution levels.

Policy 8: New and/or existing developments shall comply with the Kern County Zoning Ordinance and this Specific Plan. Where conflicts appear, the more restrictive requirements shall prevail.

Policy 10: Require that construction sites be provided with a soil retardant measure approved by the County of Kern (Department of Planning and Development Services and the Environmental Health Services Department) to reduce fugitive dust or blowing sand.

Policy 11: Retain vegetation until actual construction begins.

Implementation Measures

Measure 6: All discretionary permits will be required to be consistent with the Kern County Zoning Ordinance and the Willow Springs Specific Plan. Where conflicts appear, the more restrictive requirement shall prevail.

Measure 8: Every effort shall be made by the developer to control dust during construction activities by sprinkling the site with water or other soil retardants. Additionally, vegetative cover on the site shall be retained until actual construction begins.

Air Quality

Goal

Goal 1: Imposition of appropriate mitigation measures to reduce where practical to do so, the effect short-term and long-term projects have on the areas which involve grading activities, erosion controls, revegetation of disturbed sites, and provisions to introduce into the plan are a competitive job market to reduce travel times.

Policy

Policy 1: Compliance with the Mitigation/Implementation Measures and enactment of an approved Air Quality Attainment Plan.

Implementation Measures

Measure 1: To mitigate potential dust generation impacts, the Willow Springs Specific Plan Update project shall comply with applicable County regulations (to the satisfaction of the Kern County Air Pollution Control District), which require specific dust control measures.

Measure 2: During construction, all grading activities shall be ceased during periods of high winds (i.e., greater than 30 mph). To assure compliance with this measure, grading activities are subject to periodic inspections by County staff.

Measure 3: Construction equipment shall be fitted with the most modern emission control devices and be kept in proper tune. Motors out of proper tune can result in emissions that vastly exceed recommended standards.

Measure 4: The project applicants shall, to the extent feasible, implement applicable control measures contained in the Attainment Plan in effect at the time of adoption of this Specific Plan, by the Air Pollution Control District in 1991. (See Environmental Impact Report Air Quality for additional recommended mitigation measures, page 162.).

Measure 7: All phases of the Willow Springs Specific Plan Update project shall comply with applicable rules and regulations of the Kern County Air Pollution Control District.

Kern County Best Management Practices for Dust Management

In 2013, solar developers and planners from Los Angeles and Kern Counties began a series of meetings to discuss the best practices for protecting air quality and minimizing construction impacts from solar projects.

The process incorporated feedback from the Mojave Air and Space Port, members of the Mojave Chamber of Commerce, Rosamond Municipal Advisory Council, and numerous other community leaders. Subsequent to these meetings, Kern County has developed a new approach to best control fugitive dust emissions and improve air quality in the high desert. The County's approach recognizes that effective dust control management must be site-specific and cannot be "one-size-fits-all" because standard methods do not adequately meet the challenges of such a unique environment as the Mojave Desert region. An effective strategy has to be based on soil conditions, topography, adjacent land uses, and wind direction.

Conditions imposed on the new solar projects in Kern County are more extensive and rigorous than ever before. These include:

- Development of a Site Specific Dust Control Plan that considers ongoing community stakeholder input, to the extent feasible and practicable.
- Use of Global Positioning System (GPS) or lasers to level posts, generally avoiding grading except when elevation changes exceed design requirements.
- When grading is unavoidable, it is to be phased and done with the application of approved chemical dust palliatives (chemical substances applied to a road surface to reduce airborne dust) that stabilize the earth.
- Use of dust suppression measures during road surface preparation activities, including grading and compaction.
- Final road surfaces must be stabilized to achieve a measurable threshold friction velocity (TFV – the wind speed at which erosion starts) equal to or greater than 100 centimeters per second.
- If ground is cleared, plant roots must be left in place where possible.
- Expanded onsite watering processes.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved (i.e., without asphalt) surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least 2 feet of freeboard.
- Sending mailings to residents within 1,000 feet of a project site.

Kern County is also carefully monitoring all solar construction activities to ensure that all mitigation measures are followed and are adequate to minimize dust-related health concerns.

Eastern Kern Air Pollution Control District

The EKAPCD has primary responsibility for regulating stationary sources of air pollution situated within its jurisdictional boundaries. To this end, the EKAPCD implements air quality programs required by State and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their role in protecting air quality. The EKAPCD is also responsible for managing and permitting existing, new, and modified sources of air emissions within the 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 District is requiring a Fugitive Dust Emissions Monitoring Plan with a recommendation for each facility to install upwind and downwind particulate matter air monitoring, utilization of an Alternative Air Monitoring Strategy, or joining into the EKAPCD regional fugitive dust monitoring network. The monitoring will be used to demonstrate compliance with the District Rules and Regulations.

Rule 210.1

Rule 210.1 establishes stationary source offset levels for new and modified stationary sources of air pollutants. Under this rule, the EKAPCD has established required offsets for when the emissions from a source exceed the following trigger levels:

- PM_{10} – 15 tons/year
- SO_X (as SO_2) – 27 tons/year
- VOCs – 25 tons/year
- NO_X (as NO_2) – 25 tons/year

Rule 401

Rule 401 states that a person shall not discharge into the atmosphere, from any single source of emissions whatsoever, any air contaminant from any single emissions source for a period or periods aggregating more than 3 minutes in any one hour which is:

- As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
- Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection A [of the Rules].

Rule 402

Rule 402 of the EKAPCD's rules and regulations addresses significant man-made dust sources from active operations. An active operation is defined as "Activity capable of generating fugitive dust, including any open storage pile, earth-moving activity, construction/demolition activity, disturbed surface area, and non-emergency movement of motor vehicles on unpaved roadways and any parking lot served by an unpaved road subject to this Rule." Rule 402 applies to specified bulk storage, earthmoving, construction and demolition, and man-made conditions resulting in wind erosion, and includes the following requirements:

- A person shall not cause or allow emissions of fugitive dust from any active operation to remain visible in the atmosphere beyond the property line of the emission source.

- A person shall utilize one or more Reasonably Available Control Measures (RACM) or Bulk Material Control Measures (BMCM) to minimize fugitive dust emissions from each source type that is part of any active operation, including unpaved roadways.
- No person shall conduct a large operation without filing for and obtaining an approved fugitive dust emission control plan. Large operation is defined as "Any construction activity on any site involving 10 or more contiguous acres of disturbed surface area, or any earthmoving activity exceeding a daily volume of 10,000 cubic yards, or relocating more than 2,500 cubic yards per day of bulk materials at least three days per year."
- EKAPCD may require onsite PM_{10} monitoring for any large operation that causes downwind PM_{10} ambient concentrations to increase more than 50 micrograms per cubic meter above upwind concentrations as determined by utilizing high-volume particulate matter samplers, or other EPA-approved equivalent method(s).

Rule 404.1

Rule 404.1 pertains to Particulate Matter Concentrations – Desert Basin and states:

- A person shall not discharge into the atmosphere from any single source operation, in service on the date this Rule is adopted, particulate matter in excess of 0.2 grains per cubic foot of gas at standard conditions.
- A person shall not discharge into the atmosphere from any single source operation, the construction or modification of which commenced after the adoption of this Rule, particulate matter in excess of 0.1 grains per cubic foot of gas at standard conditions.

Rule 419

Rule 419 states that a person shall not discharge from any source whatsoever such quantities of contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or safety of such persons or the public or that cause or have a natural tendency to cause injury or damage to business or property.

Rule 423

Rule 423 adopts the EPA's National Emissions Standards for Hazardous Air Pollutants by reference, which grants EKAPCD the ability to ensure that all sources of hazardous air pollution would comply with applicable standards, criteria, and requirements set forth in Title 40, Chapter 1, Parts 61 and 63, of the Code of Federal Regulations that are in effect as of October 10, 2017.

2017 Ozone Attainment Plan

In 2008, USEPA adopted a more stringent 8-hour ozone NAAQS of 0.075 ppm. Although EKAPCD attained the 1997 8-hour ozone NAAQS, and the Indian Wells Valley planning area met the new (2008) ozone NAAQS, the EKAPCD's Design Value was higher than 0.075 ppm. In 2012, a portion of the EKAPCD was classified "marginal" nonattainment pursuant to the 2008, 8-hour Ozone NAAQS Air Quality Designations. However, EKAPCD failed to meet the 0.075 ppm standard by the applicable attainment date and was reclassified as "moderate" nonattainment, effective June 3, 2016. As a result, EKAPCD was required to submit a SIP revision for the nonattainment area by January 1, 2017, which

showed compliance with statutory and regulatory conditions applicable to the "moderate" designation (EKAPCD, 2017).

EKAPCD, in partnership with CARB, conducted photochemical modeling along with supplemental analyses to determine whether the EKAPCD could attain the 2008 ozone NAAQS by the "moderate" nonattainment deadline. Modeling indicated EKAPCD would not meet the 0.075 ppm standard by the moderate deadline but could attain it by 2020, which is the attainment date for "serious" nonattainment areas. Pursuant to Section 181(b)(3) of the CAA "Voluntary Reclassification," EKAPCD requested CARB formally submit a request to USEPA asking for voluntary reclassification of EKAPCD from "moderate" to "serious" nonattainment for the 2008, 8-hour ozone NAAQS, and revise the attainment date to December 31, 2020 (EKAPCD, 2017). USEPA reclassified EKAPCD (except for the Indian Wells Valley planning area) as "serious" nonattainment on August 6, 2018 (USEPA, 2018).

The 2017 Ozone Attainment Plan was adopted by EKAPCD on July 27, 2017, which addresses all required elements, emissions reductions, and control measures necessary to demonstrate attainment with the 2008 8-hour ozone NAAQS by 2020. CARB approved the 2017 Ozone Attainment Plan as a revision to the SIP and submitted it to USEPA on October 25, 2017 (CARB, 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 EPA in the 1999 base year. Kern County is contained within two air basins: San Joaquin Valley Air Basin (SJVAB) and the MDAB.

Each air basin has its own plans and pollutant budgets. Kern COG makes conformity findings for each air basin. Kern County recently prepared a draft 8-hour ozone air quality conformity analysis to analyze Kern County's federally approved Federal Transportation Improvement Program (FTIP) and the 2018 RTP. The conformity findings conclude that all air quality conformity requirements have been met (Kern COG, 2018a, 2018b).

4.3.4 Impacts and Mitigation Measures

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

Methodology

The air quality significance criteria were developed considering the CEQA significance criteria developed by the local air quality district in the project area, approved CEQA air quality checklists, and considering other federal criteria. The analysis presented within this section is based on both qualitative and quantitative approaches for determining air quality impacts associated with construction, operation, and maintenance of the project. The findings in the Air Quality Report prepared for the project (located in Appendix C-1 of this EIR), which was prepared in accordance with Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* documents.

Air Quality Plan Consistency

As a component of the cumulative impact analysis, the County Air Quality Assessment guidance (Kern County, 2006) states that the following should be included in the consistency determination for existing air quality plans:

- Discuss project in relation to Kern COG conformity and traffic analysis zones (TAZs)
- Quantify the emissions from similar projects in the Ozone Attainment Plan for the applicable basin. Discuss the Ozone Attainment Plan for the applicable air district, development, and relation to regional basin, Triennial Plan, and SIP

Pollutant Emissions

The construction and operational emissions were estimated from several emissions models and associated spreadsheet calculations, depending on the source type and data availability. The primary emissions models used included CARB's on-road vehicle emission factor model (EMFAC) version 2017 and the California Emissions Estimator Model (CalEEMod). Construction and operational emissions were estimated using project specific data and schedules within the models. Refer to Appendix C-1 of this EIR for details on equipment fleet, hours of operation, vehicle miles traveled and other assumptions used.

Construction Emissions

Based on information provided by the project applicant, construction assumptions for the project have been quantified using conservative assumptions of a reasonably worst-case air quality scenario. Construction emissions have been quantified for each individual facility using an Excel spreadsheet populated by the project proponent and then combined to assess emissions for the project as a whole. The Excel spreadsheet model has been deemed acceptable by the EKAPCD. The emissions calculations used CARB off-road emissions factors for equipment exhaust, CARB EMission FACtor (EMFAC) 2017 emission factors for on-road vehicle exhaust, and EPA AP-42 emissions factors for earthwork and trenching fugitive dust emissions.

Construction emissions consist of vehicle and equipment exhaust and fugitive dust. Construction of the proposed project is anticipated to take 12 to 24 months. Air emissions calculations were performed for both before and after the incorporation of Applicant-proposed Mitigation Measures MM 4.3-1 to MM 4.3-3. These mitigation measures include those typically required by Kern County for NO_X (compliance with applicable CARB and EKAPCD rules) and PM_{10} (watering program for dust control). See the Air Quality/Greenhouse Gas Assessment (Appendix C-1) for a complete list of construction assumptions,

including equipment, and vehicles. Details regarding the methods and activity assumptions by source type are provided below.

Off-Road Equipment. For the purpose of this project, off-road equipment is defined as equipment powered by an EPA defined non-road engine. The off-road equipment exhaust emissions were calculated with emission factors from the California Emissions Estimator Model (CalEEMod). The analysis with these CalEEMod emission factors provided the total peak emissions that would occur if all pieces of equipment were used on the same day. This is a conservative estimate and, therefore, represents a worst-case scenario. It is not likely that all equipment would be working at the same time, and, therefore, emissions would be lower than this worst-case scenario.

On-Road Vehicles and Trucks. EMFAC2017 emissions factors were applied to the estimated vehicle miles traveled for the project. Construction of the project would generate emissions associated with the transport of machinery and supplies to and from the site, emissions from trucks transporting materials and water to and from the site, and emissions associated with worker trips. Additionally, the analysis includes emissions from delivering the construction materials and PV modules (panels) from the Port of Long Beach to the project site (a distance of approximately 100 miles).

Fugitive Dust Emissions. The following potential sources of fugitive dust were considered in the analysis:

- Site grading and other construction activities during the construction phases to prepare for installation of various project facilities were calculated with AP-42 factors;
- Vehicles and equipment driving on paved roads (both on- and off-site) during construction and operations were calculated with EMFAC2017 factors; and
- Vehicles and equipment driving on the unpaved, on‐site, roads during operations were calculated with AP-42 factors.

Operational Emissions

Operational emissions associated with the proposed project were also calculated using EMFAC2017 and CalEEMod, version 2016.3.2. Long-term emissions result from operational mobile sources from new employees, cleaning of the solar panels, Energy Storage System (ESS) facilities and emergency backup generators. All assumptions and calculations are provided in Appendix C-1 of this EIR.

Vehicle Emissions. Once placed into service, the project would be operated by approximately 20 permanent employees. The employees would monitor and report the performance of the project and conduct preventative and corrective maintenance. It should be noted that preventative maintenance kits and certain critical spares would be typically stored onsite, while all other components would be readily available from a remote warehouse facility. As such, vehicle trips associated with project operation and maintenance would be minimal. Additionally, mobile source emissions for water deliveries and panel washing for the project have been calculated based on a conservative estimate of 4,800 miles traveled per year for trucks.

ESS Facilities. The project may have up to two ESS's facilities, one at each separate Facility. The ESS systems would be connected to the power grid, and could be charged by the project and/or charged by energy from the electrical grid. For the modeling purposes, air emissions were conservatively assumed to be only 50 percent dependent on the renewable energy produced by the individual solar facilities. The ESS facilities would not have any additional mobile trips, solid waste, or water usage attributed to them. The ESS operation emissions were calculated using CalEEMod.

Emergency Backup Generator Emissions. The project may have up to two emergency backup generators (Backup Generator), one for each separate Facility. Backup generators would either be diesel or battery powered; for air emission modeling purposes it is assumed the backup generators would be diesel powered. These emergency Backup Generators would follow compliance with EKAPCD and CARB rules and regulations. It is assumed that these two emergency backup generators would be 100 horsepower. It is assumed the generators would each run for 12 hours per year. The operational emissions of these emergency generators were calculated using CalEEMod.

Decommissioning Emissions

At such time as the project is decommissioned, equipment operation and site restoration activities would result in impacts to air quality. Given the assumption that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to activities associated with construction of the project. It should be noted that this does not take into account any future improvement in technology or subsequent reductions in air emissions. Project decommissioning is projected to be shorter in duration than construction and take four to eight months to complete, instead of 12- to 24 months for construction. Therefore, decommissioning is assumed to be one-third of the predicted construction emissions. 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.

Health Risk Assessment

The approach to estimating cancer risk from long-term inhalation exposure to carcinogens requires calculating a range of potential doses and multiplying by cancer potency factors in units of inverse dose to obtain a range of cancer risks. For cancer risk, the risk for each age group is calculated using the appropriate breathing rates, age sensitivity factors, exposure duration, and cancer risks calculated for individual age groups are summed to estimate cancer risk based on assumed exposure durations. The California Office of Environmental Health Hazard Assessment (OEHHA) recommends a 30-year exposure duration (residency time) for residential locations (OEHHA, 2015). Note that PM_{10} exhaust emissions are used as a surrogate for DPM based on guidance from the OEHHA.

EPA's AERMOD atmospheric dispersion model was used to simulate physical conditions and predict pollutant concentrations near the construction work areas. AERMOD is EPA's recommended air dispersion model for near-field modeling from vented and non-vented sources. The model uses hourly meteorological observations and emission rates to determine hourly average concentrations from which other averaging periods (e.g., 24-hour, annual averages) are determined. The Hotspots Analysis and Reporting Program Version 2 (HARP2) Air Dispersion & Risk Tool (ADMRT) version 19121 was employed to calculate the health risks at nearby sensitive receptors. Dispersion modeling assumptions and results are provided in Appendix D, *Health Risk Assessment for the AVEP Solar Project,* of this EIR.

Cancer risk is quantified based on the OEHHA methodology, the residential inhalation cancer risk from the annual average DPM concentrations is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor (ASF), the frequency of time spent at home (for residents only), and the exposure duration divided by averaging time, to yield the excess cancer risk. It is important to note that exposure duration is based on a one-year construction period. Cancer risk must be separately

calculated for specified age groups, because of age differences in sensitivity to carcinogens and age differences in intake rates (per kg body weight). Separate risk estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure.

Non-cancer chronic impacts are calculated by dividing the annual average concentration by the Reference Exposure level (REL) for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. Based off OEHHA guidance, the current REL for DPM is 5 $\mu g/m^3$.

Ambient Air Quality Analysis

The Kern County *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* (Kern County, 2006) require a dispersion modeling analysis of the maximum 24-hour average concentrations of PM_{10} and $PM_{2.5}$ resulting from construction in comparison to applicable ambient air quality standards and thresholds; therefore, an ambient air quality analysis (AAQA) was performed for the project during construction using AERMOD.[2] In addition, as unmitigated NO_X emissions for the project exceed regulatory thresholds, NO_2 was included in the AAQA. The purpose of the AAQA is to determine whether the project's construction emissions would cause or contribute to exceedances of any CAAQS or NAAQS during construction. Dispersion modeling assumptions and results are provided in Appendix C-1 of this EIR.

CO Hotspot

Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to these CO "hot-spots" may have a greater likelihood of developing adverse health effects. The potential for the proposed project to result in localized CO impacts at intersections resulting from addition of its traffic volumes is assessed based on Kern County's suggested criteria, which recommends performing a localized CO impact analysis for intersections operating at or below level of service (LOS) E.

Visibility Impacts

The County guidance states that potential impacts to visibility should be evaluated for all industrial projects and any other projects, such as mining projects, that have components that could generates dust or emissions related to visibility.

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

Coccidioides immitis Exposure

While there are no specific thresholds for the evaluation of potential *Coccidioides immitis* (Valley Fever) exposure, the potential for workers or area residents contracting Valley Fever as a result of the project is evaluated based on the anticipated earth-moving activities, and considers applicant-proposed measures and compliance with Rule 8021, Section 6.3, which requires development and implementation of a dust control plan to help control the release of the *Coccidioides immitis* fungus during construction activities.

[2] Since operational activities would be minimal, consisting of minor daily trip increases and maintenance activities, ambient air quality modeling was not performed.

Asbestos

There are no quantitative thresholds related to receptor exposure to asbestos. However, EKAPCD Rule 423 (National Emission Standards for Hazardous Air Pollutants and Source Categories) requires all projects to comply with the provisions of Title 40, Chapter I, Parts 61 and 63, of the Code of Federal Regulations.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist includes items taken from previous versions of Appendix G of the CEQA *Guidelines*. However, Appendix G was updated in 2018, resulting in minor changes to the checklist items. The analysis herein is based on the updated CEQA *Guidelines*, which differ slightly from the Kern County CEQA Implementation Document and Kern County Environmental Checklist.

The current CEQA *Guidelines* state that a project could potentially have a significant adverse effect to 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, if implementation of the project would exceed any of the following adopted thresholds:

   i. Eastern Kern Air Pollution Control District:

      a. Operational and Area Sources:

         - 25 tons per year for ROG
         - 25 tons per year for NO_X
         - 15 tons per year for PM_{10}.

      b. Stationary Sources – determined by District Rules

         - Severe nonattainment: 25 tons per year
         - Extreme nonattainment: 10 tons per year

c. Expose sensitive receptors to substantial pollutant concentrations;

   - Cancer Risk: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
   - Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of 1 in one million.

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

Project Impacts

Impact 4.3-1: The project would conflict with or obstruct implementation of the applicable air quality plan.

In general, a project would not interfere with the applicable air quality plan if it is consistent with growth assumptions used to form the applicable air quality plan and if the project implements all reasonably available and feasible air quality control measures. The consistency with the Air Quality Management Plan (AQMP) is discussed below for construction and operation.

Air quality impacts are controlled through policies and provisions of the EKAPCD, the Kern County General Plan, and the Kern County Code of Building Regulations. The CCAA requires air pollution control districts with severe or extreme air quality problems to provide for a 5 percent reduction in nonattainment emissions per year. The Attainment Plans prepared for the EKAPCD complies with this requirement. CARB reviewers approve or amend the document and forward the plan to EPA for final review and approval within the SIP.

Required Evaluation Guidelines

CEQA *Guidelines* and the CAA (Sections 176 and 316) contain specific references regarding the need to evaluate consistencies between the project and the applicable AQMP for the projects. To accomplish this, CARB has developed a three-step approach to determine project conformity with the applicable AQMP:

Determination that an AQMP is being implemented in the area where the project is being proposed. EKAPCD's most recently adopted air quality management plan is its Ozone Air Quality Attainment Plan (AQAP) that is approved by CARB and EPA.

The project must be consistent with the growth assumptions of the applicable AQMP. The project, as solar facility, would not introduce land uses that would generate vehicle trips or promote growth in the project area beyond what is projected in the Kern County General Plan and therefore incorporated into the AQAP.

The project must contain in its design all reasonably available and feasible air quality control measures. The project incorporates various policy and rule-required implementation measures that would reduce related emissions.

Because implementation of the project would not result in additional growth beyond what was anticipated by the Kern County General Plan and incorporated into the AQAP, conclusions may be drawn from the following criteria:

- The findings of the analysis conducted using Traffic Analysis Zones (TAZ) show that sufficient employment increase is planned for the project area such that new employment opportunities afforded by the project were included in the growth assumptions used to develop the AQAP.
- The primary source of emissions from the project would be from construction and operation vehicles that are licensed through the State and whose emissions are already incorporated into CARB's emissions inventory.

Construction

As noted in **Table 4.3-4**, *Short-Term (Construction) Project Emissions*, temporary unmitigated emissions during construction would exceed the thresholds adopted by Kern County for NO_X and PM_{10}. With mitigation, the construction emissions would be reduced to levels below EKAPCD thresholds. Furthermore, Mitigation Measures MM 4.3-1 and MM 4.3-2 would be required to reduce fugitive dust emissions by implementing exhaust reduction measures and a Fugitive Dust Control Plan, respectively. Exhaust reduction measures include equipment maintenance, idling restrictions, and compliance with CARB and EKAPCD rules. As depicted in **Table 4.3-4**, *Short-Term (Construction) Project Emissions*, mitigation measures would reduce temporary NO_x and PM_{10} construction emissions to below significance thresholds However, as the project includes *all reasonably available and feasible air quality control measures* to reduce emissions of criteria pollutants, the proposed project would not conflict with implementation of the air quality management plan.

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. The land uses designated in the Kern County General Plan forms the basis for the growth assumptions in the air quality plans. The project would be consistent with the existing land use designations in the current Kern County General Plan and would not introduce a land use that would induce population or housing growth that could result in a substantial increase in vehicle miles traveled and associated criteria pollutant emissions. When compared against the current zoning of the project site that would allow for the development of agricultural uses, the solar facility would result in less operational emissions from mobile and area sources that would be generated. Operational emissions associated with the project would be those generated from mobile sources traveling to and from the project area, panel washing and maintenance, operation of the ESS systems, and emergency back-up generators. As shown below in **Table 4.3-5**, *Project Operational Emissions*, the proposed project's long-term operational emissions would be well below EKAPCD's applicable significance thresholds.

TABLE 4.3-4: SHORT-TERM (CONSTRUCTION) PROJECT EMISSIONS

	Pollutant (tons/year)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Unmitigated Emissions						
Chaparral Solar Facility	2	20	17	<1	11	2
Rabbitbrush Solar Facility	2	15	14	<1	9	2
Total Cumulative Unmitigated Emissions	**4**	**35**	**32**	**<1**	**20**	**4**
Mitigated Emissions						
Chaparral Solar Facility	2	13	17	<1	5	2
Rabbitbrush Solar Facility	2	10	14	<1	4	1
Total Cumulative Mitigated Emissions	**4**	**23**	**32**	**<1**	**10**	**3**
EKAPCD Threshold	25	25	NA	27	15	NA
Is Threshold Exceeded after Mitigation?	No	**No**	NA	No	No	NA

NOTES:
Values may not add exactly due to rounding.
Particulate Matter Mitigation Measures include the following: water exposed surfaces two times daily, apply water during soil loading/unloading, manage haul road dust by watering two times daily, and reduce speed on unpaved roads to less than 15 miles per hour.
Total project construction emissions were quantified using a conservative assumption that all both solar facilities will be built at the same time during a 12 to 24-month period.
Assumptions used in the analysis are detailed in the Air Quality/Greenhouse Gas Assessment AVEP Solar (MBI, 2020a) as included in Appendix C-1.

SOURCE: MBI, 2020a.

TABLE 4.3-5: PROJECT OPERATIONAL EMISSIONS

	Pollutant (tons/year)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Unmitigated Emissions						
Employee Vehicle Emissions	<1	<1	1	<1	<1	<1
Water Truck Emissions	<1	<1	<1	<1	<1	<1
Backup Generator Emissions	<1	<1	<1	<1	<1	<1
ESS Facility Emissions	1	<1	<1	<1	<1	<1
Total Unmitigated Operational Emissions	**1**	**<1**	**1**	**<1**	**<1**	**<1**
EKAPCD Threshold	25	25	NA	27	15	NA
Is Threshold Exceeded?	No	No	NA	No	No	NA
Emissions Displaced	0.00	-76.30	0.00	0.00	-4.02	-0.31

NOTES:
Values may not add exactly due to rounding.
Assumptions used in the analysis are detailed in the *Air Quality/Greenhouse Gas Assessment AVEP Solar* (MBI, 2020a) as included in Appendix C-1.

SOURCE: MBI, 2020a.

Furthermore, the solar power generation system of the project could also function to reduce the air pollutant emissions within the MDAB to the extent that the power generated is used to offset power production from fossil fueled power plants within (or contributory to) the MDAB. This power production is not projected within the existing air quality plans, and so the 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 project would not obstruct implementation of an air quality plan during operation; therefore, operational impacts would be less than significant. As it is unknown if the project electrical generation would replace current generation within the Basin, outside the Basin, or simply accommodate future supply forecast needs, the potential emissions displaced by the project are not factored into the long-term operational emissions analysis although they are shown in **Table 4.3-6**, *Decommissioning Emissions*, for informational purposes.

TABLE 4.3-6: DECOMMISSIONING EMISSIONS

	Pollutant (tons/year)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Unmitigated Emissions						
Chaparral Solar Facility	1	7	6	<1	4	1
Rabbitbrush Solar Facility	1	5	5	<1	3	1
Total Cumulative Unmitigated Emissions	**1**	**12**	**11**	**<1**	**7**	**1**
Mitigated Emissions						
Chaparral Solar Facility	1	4	6	<1	2	1
Rabbitbrush Solar Facility	1	3	5	<1	1	<1
Total Cumulative Mitigated Emissions	**1**	**8**	**11**	**<1**	**3**	**1**
EKAPCD Threshold	25	25	NA	27	15	15
Is Threshold Exceeded?	No	No	No	No	No	No

NOTES:
Values may not add exactly due to rounding.
Decommissioning would use the same equipment as construction but would occur over a shorter duration of four to eight months.
Particulate Matter Mitigation Measures include the following: water exposed surfaces two times daily, apply water during soil loading/unloading, manage haul road dust by watering two times daily, and reduce speed on unpaved roads to less than 15 miles per hour.
Total project construction emissions were quantified using a conservative assumption that both solar facilities will be built at the same time during a 12 to 24-month period.
Assumptions used in the analysis are detailed in the Air Quality/Greenhouse Gas Assessment AVEP Solar (MBI, 2020a) as included in Appendix C-1.

SOURCE: MBI, 2020a.

Decommissioning

The proposed project is anticipated to operate for 30 to 35 years, after which the land could be converted to other uses in accordance with applicable land use regulations in effect at that time if its Power Purchase Agreement (PPA) is not extended, or the project otherwise ceases operation. The project will be required to develop a decommissioning plan and financial assurances for review and approval by the Kern County Planning and Natural Resources Department. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, State, and County regulations.

At such time as the facility is decommissioned, equipment operation and site restoration activities would result in impacts to air quality. Given the fact that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to activities associated with construction of the project. As shown in **Table 4.3-6**, *Decommissioning Emissions*, the unmitigated decommissioning emissions would be below the EKAPCD thresholds and would be further reduced by implementation of

Mitigation Measures MM 4.3-1 and MM 4.3-2, which are included as a requirement of this proposed project. Therefore, operation of the project would not obstruct implementation of an air quality plan and impacts would be less than significant.

Consistency with Applicable Air Quality Management plans and Ozone Attainment Plan

The project would comply with all applicable EKAPCD rules and regulations that are consistent with the applicable air quality attainment and management plans. The EKAPD has adopted a SIP that addresses PM_{10}, ozone, and the ozone precursors NO_X and ROG. The SIP specifies that regional air quality standards for ozone and PM_{10} concentrations can be met through additional source controls and through trip reduction strategies. The applicable rules and regulations from the SIP are listed above in the regulatory setting. The SIP also establishes emissions budgets for transportation and stationary sources. Through compliance with the adopted rules and regulations, and consistency with the local land use plans, the project would comply with the applicable Clean Air Plans for the EKAPCD. The project would also be consistent with the applicable ozone attainment plan for the MDAB.

Mitigation Measures

MM 4.3-1: Implement Diesel Emission Reduction Measures during Construction, Operation and Decommissioning. To control NO_X and PM emissions during construction, the project proponent/operator and/or its contractor(s) shall implement the following measures during construction of the project, subject to verification by the County:

a. Off-road equipment engines over 25 horsepower shall be equipped with EPA Tier 3 or higher engines, unless Tier 3 construction equipment is not locally available.

b. All equipment shall be maintained in accordance with the manufacturer's specifications.

c. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.

d. Notification shall be provided to trucks and vehicles in loading or unloading queues that their engines shall be turned off when not in use for more than 5 minutes.

e. Electric equipment shall be used to the extent feasible in lieu of diesel or gasoline-powered equipment.

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

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

h. Existing electric power sources shall be used to the extent feasible. This measure would minimize the use of higher polluting gas or diesel generators.

i. The hours of operation of heavy-duty equipment and/or the quantity of equipment in use shall be limited to the extent feasible.

MM 4.3-2: **Implement Fugitive Dust Control Plan during Construction, Operations and Decommissioning.** To control fugitive PM emissions during construction, prior to the issuance of grading or building permits and any earthwork activities, the project proponent shall prepare a comprehensive Fugitive Dust Control Plan for review by the Kern County Planning and Natural Resources Department. The plan shall include all EKAPCD-recommended measures, including but not limited to, the following:

a. All soil being actively excavated or graded shall be sufficiently water to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soils areas. Watering shall take place a minimum of three times daily where soil is being actively disturbed, unless dust is otherwise controlled by rainfall or use of a dust suppressant.

b. Vehicle speed for all on site (i.e., within the project boundary) construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads.

c. Vehicle speeds on all offsite unpaved project-site access 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 stabilized, 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 six inches 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

With implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2, impacts would be less than significant.

Impact 4.3-2: Construction and operation of the project would expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are particularly sensitive to air pollution because they are persons that are ill, elderly, or have lungs that are not fully developed. Locations where such persons reside, spend considerable amount of time, or engage in strenuous activities are also referred to as sensitive receptors. Typical sensitive receptors include inhabitants of long-term healthcare facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, childcare centers, and athletic facilities. As detailed in the sensitive receptors discussion under Section 4.3.2, the closest sensitive receptors are approximately 120 feet from the project borders. 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 would be implemented to reduce emissions associated with construction.

Toxic Air Contaminants (TACs)

Projects are considered for potential health risks wherein a new or modified source of TACs is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to TACs.

The primary TAC of concern for this project would be DPM emitted within the project site from the construction, operation phases and decommissioning of the proposed project. The proposed project is two photovoltaic solar generation facilities and is not anticipated to generate any additional sources of toxic air contaminates with the exception of increased DPM from construction, operational, and decommissioning activities. The solar facilities may have emergency backup generators (diesel or battery powered) on site. These generators would follow strict compliance with EKAPCD and CARB rules and regulations. The anticipated emissions from these generators would be nominal and would disperse quickly. Thus, as these generators would be approved and permitted with EKAPCD and would follow strict compliance with EKAPCD and CARB rules and regulations, the operational DPM emissions from these generators would be considered to have less than significant impacts and were not calculated in the HRA.

Decommissioning activities are anticipated to occur 30 to 35 years after the initial start-up of the facilities and therefore diesel vehicles would be subject to greater restrictions and newer technologies that would reduce future diesel emissions. Additionally, the decommissioning activities would take approximately one third of the time construction occurs (i.e., four to eight months instead of 12 for each facility). Although decommission is anticipated to be shorter in duration and 30 to 35 years in the future, it is conservatively assumed in this analysis that the decommissioning health risk will be equivalent to that of the construction health risk.

Construction of the facilities would generate short-term DPM air quality impacts, therefore a risk analysis was conducted for each of the two facilities. Detailed assumptions and calculations are included in the project specific *Health Risk Assessment Data*, (MBI, 2020b; Appendix D). Cancer risks at the maximally exposed individual residents (MEIR) are 5.48 in one million and 2.88 in one million respectively for the Chaparral Solar Facility and the Rabbitbrush Solar Facility. These risk levels would not exceed the 10 in one million threshold.

The non-carcinogenic chronic and acute hazard impacts associated with construction activities were also quantified with respect to each of the facilities. Based on the results, the MEIRs would result in a maximum chronic hazard index of 0.0941 and 0.0496, respectively for the Chaparral Solar Facility and the Rabbitbrush Solar Facility. The MEIRs would result in a maximum acute hazard index of 0.1452 and 0.1235 respectively for the Chaparral Solar Facility and the Rabbitbrush Solar Facility. These are well below the chronic and acute threshold of 1.0.

The HRA demonstrates that Cancer, Chronic, and Acute risk impacts related to the simultaneous construction of the two individual Facilities would not exceed established EKAPCD and the OEHHA thresholds at nearby sensitive receptors. Additionally, non-carcinogenic and acute hazards at nearby sensitive receptors are calculated to be within acceptable limits for the project. As such, the health risk impact attributed to the construction, operation and maintenance, and eventual decommissioning of the project would not exceed EKAPCD and OEHHA thresholds, and impacts would be less than significant.

Criteria Air Pollutants

Sierra Club vs. County of Fresno (December 24, 2018)

In *Sierra Club V. County of Fresno* (S219783) (*Sierra Club*) the Supreme Court held that CEQA requires environmental impact reports to either (i) make a "reasonable effort" to substantively connect the estimated amount of a given air pollutant a project will produce and the health effects associated with that pollutant, or (ii) explain why such an analysis is infeasible (6 Cal.5th at 1165-66). However, the Court also clarified that that CEQA "does not mandate" that EIRs include "an in-depth risk assessment" that provides "a detailed comprehensive analysis … to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and population wide health risks associated with those levels of exposure." *Id*. at 1665. However, correlating the project's criteria air pollutant to specific health impacts, particularly with respect to O_3 is not possible because there is no feasible or established scientific method to perform such analysis. This conclusion is supported by both the SJVAPCD and the SCAQMD who have determined that this type of analysis is speculative and infeasible and there are no unique issues for the SJVAPCD that would make this analysis invalid.

Writing as amicus curiae in *Sierra Club*, the SJVAPCD explained that "[t]he health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the (National Ambient Air Quality Standards [NAAQS]). Accordingly, while

the type of individual facility/health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task" (SJVAPCD, 2015).

Instead, the SJVAPCD explained that it assesses a project's potential to exceed NAAQS by evaluating the project's compliance with district thresholds of significance, which are measured in mass emissions (SJVAPCD, 2015). As explained by SJVAPCD, its thresholds are based on factual, scientific data and have been set at a level that ensures that NAAQS will not be exceeded, taking into consideration all cumulative emission sources (SJVAPCD, 2015). The SJVAPCD explained that attempting to connect criteria pollutant emissions to localized health impacts will "not yield reliable information because currently available modeling tools are not well suited for this task" (SJVAPCD, 2015). Available models are only equipped to model the impact of all emissions sources on an air basin-wide or regional basis, not on a project-level basis, and "[r]unning the photochemical grid model used for predicting ozone attainment with emissions solely from one project would thus not be likely to yield valid information given the relative scale involved" (SJVAPCD, 2015).

This inability to "accurately ascertain local increases in concentration" of mass emissions and then to further link emissions with health effects is particularly true for O_3 and its precursors NO_X and ROG and VOC; O_3 is not directly emitted into the air, but is instead formed as ozone precursors undergo complex chemical reactions through sunlight exposure (SJVAPCD, 2015). Given the complex nature of this process, and the fact that O_3 can be transported by wind over long distances, "a specific tonnage amount of NO_X or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area" (SJVAPCD, 2015). For this reason, the photochemical analysis for O_3 is done on a regional scale and it is inappropriate to analyze O_3 impacts at a local or project-level basis because a localized analysis would at most be speculative, and at worst be misleading. Speculative analysis is not required by CEQA (*CEQA Guidelines* Section 15145; *Laurel Heights Improvement Association V. Regents of the University of California 1988*).

The SJVAPCD also explained that the disconnect between the tonnage of precursor pollutants and the concentration of O_3 or particulate matter formed in a particular area is especially important to understand in considering potential health effects because it is the concentration, not the tonnage, that causes health effects (SJVAPCD, 2015). The SJVAPCD explained that even if a model were developed that could accurately assess local increases in concentrations of pollutants like O_3 and particulates, it would still be "impossible, using today's models, to correlate that increase in concentration to a specific health impact" (SJVAPCD, 2015). The SJVAPCD stated that even a project with criteria pollutant emissions above its CEQA thresholds does not necessarily cause localized human health impacts as, even with relatively high levels of emissions, the SJVAPCD cannot determine "whether and to what extent emissions from an individual project directly impact human health in a particular area" (SJVAPCD, 2015). The SJVAPCD explained that this is particularly true for development projects like the project, where most of the criteria pollutants derive from mobile and area sources and not stationary sources. The SCAQMD also, as amicus curiae in *Sierra Club*, made similar points, reiterating that "an agency should not be required to perform analyses that do not produce reliable or meaningful results" (SCAQMD, 2015). SCAQMD agrees that it is very difficult to quantify health impacts with regard to O_3, opining that the only possible means of successfully doing so is for a project so large that emissions would essentially amount to *all* regional increases (SCAQMD, 2015). With regard to particulate matter, the SCAQMD noted that while the CARB has created a methodology to predict expected mortality from large amount of $PM_{2.5}$, the primary author of the methodology has reported that it "may yield unreliable results due to various uncertainties" and CARB staff has been directed by its Governing Board to reassess and improve it, which factor "also counsels against setting any hard-and-fast rule" about conducting this type of

analysis (SCAQMD, 2015). The amicus briefs filed by SJVAPCD and SCAQMD in *Sierra Club* are attached as part of Appendix C-2 of this EIR.

Ambient Air Quality Analysis

An ambient air quality analysis was performed to determine if the proposed project has the potential to impact ambient air quality through a violation of the ambient air quality standards or a substantial contribution to an existing or projected air quality standard with respect to NO_2, PM_{10}, and $PM_{2.5}$. The air dispersion modeling for the project construction emissions compared to the NAAQS and CAAQS was performed using the U.S. EPA AERMOD dispersion model as detailed in the *Air Quality/Greenhouse Gas Assessment* (Appendix C-1).

Table 4.3-7, *Project Construction Emissions Compared to the Ambient Air Quality Standards*, compares the results of the particulate matter dispersion modeling to the NAAQS and CAAQS for PM_{10}, $PM_{2.5}$, and NO_2. As depicted, the highest modeled emissions for the project, which assumes both solar facilities being constructed at the same time, combined with the background emissions included would be below the NAAQS and CAAQS. It should be noted that based on the dispersion modeling results, the PM_{10}, $PM_{2.5}$, O_2 ambient concentrations would disperse rapidly from the construction site. Furthermore, pollutant emissions would be distributed over the construction period, would not be concentrated in any one area, and would be reduced with Mitigation Measures MM 4.3-1 and MM 4.3-2.

TABLE 4.3-7: PROJECT CONSTRUCTION EMISSIONS COMPARED TO THE AMBIENT AIR QUALITY STANDARDS

	Pollutant (µg/m^3)		
Emissions Source	**PM_{10} 24-Hour**	**$PM_{2.5}$ 24-Hour**	**NO_2 One-Hour**
Maximum Modeled Concentration	3	1	15
Background Concentration	25	28	116
Combined Concentration	28	29	132
NAAQS	150	35	188
CAAQS	50	35	339
Exceeded NAAQS or CAAQS	No	No	No

NOTES:
Values may not add exactly due to rounding.
Assumptions used in the analysis are detailed in the Air Quality/Greenhouse Gas Assessment AVEP Solar (MBI 2020a) as included in Appendix C-1.
SOURCE: MBI, 2020a.

Project Heath Effects of Criteria Air Pollutants

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. The air districts such as EKAPCD establish and recommend that the analyses of criteria air pollutants use CEQA significance thresholds that are 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 human health impacts that a project may have. Therefore, the project's construction emissions do not necessarily indicate that the 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**, *National and State Criteria Pollutant Standards and Eastern Kern Air Pollution Control District Attainment Status*, the MDAB is currently in State and Federal nonattainment status for ozone and PM_{10}. 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 of 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 and not on 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 particulate matter. 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. Furthermore, as shown in **Table 4.3-7**, *Project Construction Emissions Compared to the Ambient Air Quality Standards*, the project's construction NO_X to NO_2 emissions would not contribute to an exceedance of the NAAQS or the CAAQS in the vicinity. As such, it can be reasonable inferred that the project's NO_X and subsequent NO_2 construction emissions would not exceed the EKAPCD thresholds with implementation of mitigation measures, and would not impede attainment of the NAAQS or the CAAQS; which are standards put in place to protect the public health and environment.

Regarding health effects of criteria air pollutants, the project's potential to result in regional health effects associated with ROG, NO_X, PM_{10} and $PM_{2.5}$ on specific vulnerable populations cannot be calculated given existing scientific constraints. A scientific method to calculate the exact number of individuals in a vulnerable population that will get sick has not been developed, and therefore, it is assumed localized health effects associated with NO_X, PM_{10}, and $PM_{2.5}$ emissions from project implementation could occur. The project proposes the construction and operation of a large-scale utility solar project that would require dust-generating construction activities such as pile-driving, mowing, and grading, over a large area. Due to the open nature of the project site, blowing dust could occur and result in the dispersal of criteria air pollutants such as $PM_{2.5}$ and potentially contribute to the transmission of respiratory diseases like COVID-19. While COVID-19 is thought to spread mainly through close contact from person-to-person, the CDC is still learning how the virus spreads and the severity of the illness it causes (CDC, 2020b). COVID-19 research and causality is still in the beginning stages. A nationwide study by Harvard University found a linkage between long term exposure to $PM_{2.5}$ as air pollution and statistically significant increased risk of COVID-19 death in the United States (Harvard, 2020). While, construction dust suppression measures would be implemented in Mitigation Measure MM 4.3-2, exposure to dust during construction could still occur which

could increase the health susceptibility and increase the severity of the disease. There is no vaccine to date for COVID-19. In addition to implementation of Mitigation Measure MM 4.3-2, the project would implement Mitigation Measure MM 4.3-3, which requires implementation of a COVID-19 Health and Safety Plan in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates.

Therefore, implementation of Mitigation Measures MM 4.3-2 and MM 4.3-3 would be required to reduce the project's regional and localized health effects associated with criteria air pollutants and COVID-19; however, the exact reduction from implementation of these mitigation measures cannot be quantified given existing scientific constraints.

CO Hotspots

A CO "hotspot" can occur when vehicles are idling at highly congested intersections. CO hotspots can adversely affect nearby sensitive receptors. The Kern County Planning Department's, Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports (2006) states that CO hotspots must be analyzed when one of the following conditions occur: (a) a project increases traffic at an intersection or roadway that operates at a Level of Service (LOS) E or worse; (b) a project involves adding signalization and/or channelization to an intersection; or (c) sensitive receptors such as residences, schools, hospitals, etc., are located in the vicinity of the affected intersection or signalization.

The proposed project is not located in the vicinity of an intersection operating at level of service (LOS) E or worse. The project would have trip generation associated with construction worker vehicles and vendor trucks. As construction is only expected to last 12 to 24 months, it would be considered temporary and would not result in a long-term source of CO emissions. Also, the project would result in a minimal traffic trip increase during project operations for the 20 maintenance and security employees traveling to and from the project site. These trips would be nominal and not capable of decreasing the LOS of any intersection in the project vicinity. As identified in Section 4.15, *Transportation and Traffic*, of this EIR, the project would not result in intersections operating at or below LOS E. Therefore, the project would not have CO hotspot–related impacts, and would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded. Therefore, impacts would be less than significant and a CO hotspot analysis is not required.

Valley Fever

During the proposed ground disturbing activities associated with the project, the potential exists that such activities could disturb dust particles and, if present, *Coccidioides immitis* (CI) spores, which could then be released into the air and potentially be inhaled by on-site workers and nearby sensitive receptors; exposure to these spores can cause an illness in some individuals known as Valley Fever. Because dust can be an indicator that increased efforts are needed to control other airborne particulates (including CI spores, if any), the project is required to control dust and the potential for exposure to any CI spores as well as provide training and awareness of Valley Fever via Mitigation Measures MM 4.3-2 through MM 4.3-5.

Mitigation Measure MM 4.3-2 requires the project to have comprehensive site construction controls in place to proactively control the generation of fugitive dust as required and regulated by the EKAPCD Rule 402. This Rule also requires the site to have a designated dust monitor, as well as visible signage for nearby residents with the phone number for the site construction management and the EKAPKD for nearby residents use if they see blowing dust.

Mitigation Measure MM 4.3-3 requires the project to provide training to construction workers on measures they must take to proactively control and reduce fugitive dust and the potential for the release of CI spores during their ground disturbing activities, training on specific worker/task safety procedures, and general information regarding symptoms testing and treatment options for Valley Fever. All workers are trained in and are expected to use their "stop work" authority if their activities are deemed to be causing the release of fugitive dust. This Mitigation Measure also requires the project to develop an educational Valley Fever Training Handout for distribution to onsite workers and nearby residents. This handout contains general information about the causes, symptoms, and treatment instructions regarding Valley Fever, including contact information of local health departments and clinics knowledgeable about Valley Fever. MM 4.3-4 requires the implementation of a COVD-10 Health and Safety Plan. MM 4.3-5 is proposed to ensure appropriate public awareness regarding Valley Fever.

With the implementation of Mitigation Measures MM 4.3-2 through MM 4.3-5, the potential for the release of CI spores, if present, and the associated potential for workers or nearby residents to contract Valley Fever would be minimized; accordingly, the project would not add significantly to the existing exposure level of construction workers or nearby residences to the CI fungus.

Asbestos

Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading of development projects, and at mining operations.

Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. However, according to information provided by the Department of Conservation Division of Mines and Geology, the project site is not located in an area where naturally occurring asbestos is likely to be present (MBI, 2020a). Therefore, impacts associated with exposure of construction workers and nearby sensitive receptors to asbestos would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.3-1, MM 4.3-2, and:

MM 4.3-3: **Minimize Exposure to Potential Airborne Valley Fever–Containing Dust.** To minimize personnel and public exposure to potential Valley Fever–containing dust on and off site, the following control measures shall be implemented during project construction:

a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations.

b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground.

c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.

d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers being exposed to dust shall leave the area until a truck can resume water spraying.

e. To the greatest extent feasible, heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system.

f. Workers shall receive training in procedures to minimize activities that may result in the release of airborne *Coccidioides immitis* (CI) spores, to recognize the symptoms of Valley Fever, and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Kern County Planning and Natural Resources Department within 5 days of the training session.

g. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department.

h. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health–approved respirators shall be provided to onsite personal, upon request. When exposure to dust is unavoidable, provide appropriate NIOSH-approved respiratory protection to affected workers. If respiratory protection is deemed necessary, employers must develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard (8 CCR 5144).

MM 4.3-4: At the time of project implementation, a COVID-19 Health and Safety Plan should be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy of the COVID-19 Health and Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department for review and approval.

MM 4.3-5: Prior to the issuance of grading permits, a one-time fee shall be paid to the Kern County Public Health Services Department in the amount of $3,200 for Valley Fever public awareness programs.

Level of Significance after Mitigation

Toxic Air Contaminants Except Valley Fever

With implementation of Mitigation Measures MM 4.3-1 through MM 4.3-2, impacts would be less than significant.

Valley Fever

With implementation of Mitigation Measures MM 4.3-2 through MM 4.3-5, impacts would be less than significant.

Impact 4.3-3: Construction and Operation of the project would Result in Other Emissions (such as those leading to odors) Adversely Affecting a Substantial Number of People.

Land uses typically producing objectionable odors include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses that would be associated with objectionable odors. Odors would come predominantly from construction equipment, which would cease immediately after construction is complete. Furthermore, the project would be required to comply with California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. This would further reduce the detectable odors from heavy-duty equipment exhaust. Additionally, the project would follow every EKAPCD rule and regulation to keep odors down. Given the large project area and strong prevailing winds at the project site, these odors would be dispersed and would not create significant objectionable odors. As discussed, construction- related odors would be short-term and cease upon project completion. Sparse residences are located in the vicinity of the project site; therefore, short term fueling odors during construction would not impact a substantial number of people. As such, the proposed project is not expected to result in adverse emissions affecting a substantial number of people.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The Kern County's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports (Kern County 2006) require three steps for estimating the potential significance of cumulative impacts: (1) evaluate localized impacts (Guideline Instruction 16a); (2) evaluate consistency with existing air quality plans (Guideline Instruction 16b); and (3) summarize CARB air basin emissions (Guideline Instruction 16c).

The geographic scope for cumulative air quality impacts is a six-mile radius for regional impacts and a one-mile radius for impacts on sensitive receptors. These geographic scopes of analysis are appropriate for determining air quality impacts because of the Statewide, regional, and localized nature of air quality impacts, which could occur cumulatively with the project.

Impact 4.3-4: 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.

The project is located within the Kern County portion of the MDAB, which is an area that is designated as non-attainment for federal and State ozone standards as well as State PM_{10} standards, and is under the jurisdiction of the EKAPCD. The EKAPCD's approach for assessing cumulative impacts is based on the forecasts of attainment and ambient air quality standards in accordance with requirements of the federal and State clean air acts. With respect to determining the significance of a project's contribution to regional emissions, Kern County, in its Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports document, states that projects that produce emissions that exceed the adopted thresholds of the EKAPCD for ROG, NO_X, and PM_{10} shall be considered significant for a project level and/or cumulatively for impacts to air quality. Thus, based on Kern County's guidance, if an individual project results in air emissions of ROG, NO_X, and PM_{10} that exceed the EKAPCD's thresholds for project-specific impacts, then it would also result in a cumulatively considerable net increase of these pollutants for which the project region is in non-attainment under an applicable federal or State ambient air quality standard. Even though the project does not exceed applicable thresholds on an individual basis, the project may contribute to a cumulatively considerable net increase in construction emissions for NO_x and PM_{10}, as discussed below. The project would not result in a cumulatively considerable net increase in operations-related criteria pollutant emissions, as discussed below.

Localized Impacts

There are a total of 66 projects within a six-mile radius of the project site. Several of the cumulative projects are renewable energy projects, for which the primary source of criteria pollutant emissions would be generated during their respective construction phases.

During operation, the only likely sources of emissions for renewable facilities would be limited to vehicular emissions associated with routine employee vehicle trips for maintenance and monitoring activities, the ESS facilities, and emergency backup generators. Additionally, employee trips may also be made for the washing of solar PV panels, which may only occur seasonally throughout the year. As such, the concurrent operation of all related projects along with the project is not anticipated to exceed EKAPCD CEQA thresholds.

Operation of the project would result in an overall net reduction of emissions by providing electricity that would displace energy produced from fossil fuels. Operation of the project does not exceed the project-level regulatory thresholds and, therefore, would not contribute to a long-term cumulative increase in criteria pollutants. The project's incremental contribution to operational impacts would not be cumulatively considerable.

With respect to short-term localized construction emissions, given that the MDAB is currently designated as nonattainment for both O_3 and PM_{10}, the addition of these pollutants resulting from cumulative construction and decommissioning emissions could contribute to these existing air quality violations. Assuming on a worst-case basis that the construction schedules for all cumulative projects would overlap with each other and with the proposed project, the localized effect could result in cumulatively significant construction emissions. Additionally, at a Basinwide level, the project, when considered with other

reasonably foreseeable planned solar projects with the MDAB, could potentially result in significant cumulative construction emissions, in particular, for NO_x and PM_{10}. Even with the implementation of MMs 4.3-1 through 4.3-5 and applicable rules for projects within the MDAB, the project could still result in a contribution to significant cumulative short-term, construction-related air quality impacts.

Cumulative Toxic Air Contaminants

TACs from the proposed project would be considered significant and unavoidable if project-specific risk exceeded regulatory thresholds. As discussed in Section 4.3.2, construction-related TAC impacts would result in less-than-significant cancer and non-cancer risk. Also, operation of the project would not be a significant source of TACs. Therefore, the project is not expected to pose a significant cumulative TAC impact. Therefore, TACs impacts would not be cumulatively considerable, and impacts would be less than significant.

Cumulative Carbon Monoxide (CO) – Mobile Sources

Traffic increases and added congestion caused by a project can combine to cause a CO "Hotspot." As detailed in Section 4.3.2, the minimal traffic increases from the construction and operation of the proposed project would not be significant enough to result in a CO Hotspot. Therefore, cumulative CO "Hotspot" Modeling was not conducted for this project and no concentrated excessive CO emissions are expected to be caused once the proposed project is completed. Additionally, as the majority of the other projects are also solar plants, traffic would be minimal and would not result in CO "Hotspots." Therefore, CO impacts would not be cumulatively considerable and impacts would be less than significant.

California Air Resources Board Air Basin Emissions

To evaluate the contribution of the project's operational emissions relative to the cumulative air quality conditions in Kern County and the MDAB, the project's specific emissions are compared to the 2020 projected emissions of the MDAB and Kern County portion of the MDAB. **Table 4.3-8**, *Emissions Inventory – Kern County Portion of the MDAB 2020 Projection*, and **Table 4.3-9**, *Emissions Inventory – MDAB 2020 Projection*, provide the projected 2020 emissions for Kern County and the MDAB, respectively. **Table 4.3-10**, *Proposed Project, Kern County Portion of the MDAB, and the MDAB*, provides the emissions comparison of the project with Kern County and the MDAB.

TABLE 4.3-8: EMISSIONS INVENTORY – KERN COUNTY PORTION OF THE MDAB 2020 PROJECTION

	Emissions (tons per year)		
	ROG	**NO_X**	**PM_{10}**
Total Emissions	**14,746**	**12,629**	**9,819**
Total Stationary Source Emissions	475	7,665	1,752
Percent Stationary Sources	3.22%	60.69%	17.84%
Total Area-Wide Source Emissions	584	110	2,884
Percent Area-Wide Sources	3.96%	0.87%	29.37%
Total Mobile Source Emissions	2,409	4,745	1,241
Percent Mobile Sources	16.34%	37.57%	12.64%
Total Natural Source Emissions	11,279	110	3,942
Percent Natural Sources	76.49%	0.87%	40.15%

SOURCE: Insight, 2017.

TABLE 4.3-9: EMISSIONS INVENTORY – MDAB 2020 PROJECTION

	Emissions (tons per year)		
	ROG	**NO_X**	**PM_{10}**
Total Emissions	**41,501**	**57,415**	**59,459**
Total Stationary Source Emissions	8,870	30,368	15,586
Percent Stationary Sources	21.37%	52.89%	26.21%
Total Area-Wide Source Emissions	5,585	657	34,967
Percent Area-Wide Sources	13.46%	1.14%	58.81%
Total Mobile Source Emissions	9,673	26,025	3,066
Percent Mobile Sources	23.31%	45.33%	5.16%
Total Natural Source Emissions	17,374	402	5,840
Percent Natural Sources	41.86%	0.70%	9.82%

SOURCE: Insight, 2017.

TABLE 4.3-10: PROPOSED PROJECT, KERN COUNTY PORTION OF THE MDAB, AND THE MDAB

	Emissions (tons per year)		
	ROG	**NO_X**	**PM_{10}**
2020 Emissions			
Proposed Project	1	1	<1
Kern County Mojave Desert Air Basin	14,746	12,629	9,819
Proposed Project's percent of Kern County EKAPCD	<0.01%	<0.01%	<0.01%
Mojave Desert Air Basin	41,501	57,415	59,459
Proposed Project's percent of Mojave Desert Air Basin	<0.01%	<0.01%	<0.01%
2012 Emissions			
Proposed Project	1	1	<1
Kern County Mojave Desert Air Basin	15,148	13,140	9,746
Proposed Project's percent of Kern County EKAPCD	<0.01%	<0.01%	<0.01%
Mojave Desert Air Basin	41,282	63,839	53,728
Proposed Project's percent of Mojave Desert Air Basin	<0.01%	<0.01%	<0.01%

SOURCE: Insight, 2017; ESA, 2020.

As the most recent certified MDAB Emissions Inventory was gathered in 2012, **Table 4.3-10**, *Proposed Project, Kern County Portion of the MDAB*, also includes an analysis compared to both the 2012 and 2020 inventory. Compared to both years, operational emissions associated with the project would be negligible compared to total projected emissions for Kern County and the MDAB. In addition, the power produced by the project could serve to reduce air pollutant emissions within the MDAB to the extent that the power is used to offset power production from fossil fueled power plants within (or contributory to) the MDAB, and also by providing power to allow the displacement of fossil-fueled engines (such as agricultural pumps) with electrical power units. Thus, the project's incremental contribution from project operations to the MDAB Emissions Inventory would not be cumulatively considerable.

The proposed project would not result in cumulatively considerable impacts related to incremental contribution to the MDAB Emissions Inventory. However, 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.

Cumulative Impacts Summary

As discussed in Section 4.3.4, the construction emissions generated by the project individually would not exceed EKAPCD thresholds. With regard to project level construction emissions, Mitigation Measures

MM 4.3-1 through MM 4.3-5 would reduce impacts related to NOx and PM_{10} from diesel emissions, reduce dust generation, and address potential Valley Fever risk by implementing fugitive dust control measures, establishing a public complaint protocol for excessive dust generation, and requiring Valley Fever-related training for construction workers. However, assuming on a worst-case basis that the construction schedules for all cumulative projects would overlap with each other and with the proposed project, cumulative impacts during construction could remain significant and unavoidable related to NO_x and PM_{10} emissions.

Operation of the project would result in an overall net reduction of emissions by providing electricity that would displace energy produced from fossil fuels. Operation of the project does not exceed the project-level regulatory thresholds and, therefore, would not contribute to a long-term cumulative increase in criteria pollutants. The project's incremental contribution to operational impacts would not be cumulatively considerable.

Mitigation Measures

Implement Mitigation Measures MM 4.3-1 through MM 4.3-5.

Level of Significance after Mitigation

Despite implementation of Mitigation Measures MM 4.3-1 through MM 4.3-5, construction emissions generated by the project and related projects could cumulatively combine and result in a temporary significant and unavoidable cumulative impact. Cumulative operational impacts would be less than significant.

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Section 4.4
Biological Resources

4.4.1 Introduction

This section of the EIR 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 project; 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; an analysis of potential impacts; and project-specific mitigation. The analysis presented in this section is based on a review of relevant literature, field reconnaissance surveys, and focused biological surveys as well as the 2019 *Biological Resources Technical Report* (BRTR) (WEST, 2019), located in Appendix E-1 of this EIR, and the *Federal and State Aquatic Resources Report* (Huffman-Broadway Inc., 2020) prepared for this project located in Appendix E-2 of this EIR.

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, 2018), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS, 2019), National Wetlands Inventory database (USFWS, 2020a), and the U.S. Fish and Wildlife Service (USFWS) Threatened and Endangered Species Database and Critical Habitat Portal (USFWS, 2020b). The CDFW Special Animals List (CDFW, 2019), and Cornell Lab of Ornithology's eBird database (eBird, 2020) 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 United States Geological Survey (USGS) 7.5-minute quadrangle topographic maps (USGS, 2018), soil survey maps (NRCS, 2020), climatic data (Western Regional Climate Center [WRCC], 2020) and other nearby renewable energy project's biological resources technical reports in Kern County: Rosamond Solar Project (Ironwood Consulting, 2011a), Valentine Solar Project (SWCA, 2015), Willow Springs Project (Ironwood Consulting, 2011b) and Antelope Valley Solar Projects (AECOM, 2010).

4.4.2 Environmental Setting

Regional Setting

The project site is located in southeastern Kern County and is approximately 5.5 miles west of the unincorporated community of Rosamond, 8 miles west of the Antelope Valley Freeway (State Route [SR]-14), and 12 miles northwest of the City of Lancaster. The project site is generally bound by Rosamond Boulevard to the south, Avenue of the Stars to the north, 130th Street West to the west, and 100th Street West and a transmission line easement utilized by the Los Angeles Department of Water and Power to the east.

The project site is located within is in the eastern high desert region of unincorporated Kern County and, more specifically, within the western extent of the Mojave Desert. The Mojave Desert covers more than 40,000 square miles in California, Arizona, Nevada, and Utah. The western Mojave Desert is generally

bounded by the Tehachapi Mountain to the northwest, the San Gabriel Mountains to the southwest, and the Great Basin to the east.

Climate

The climate of the Mojave Desert is characterized by hot summer temperatures and low annual precipitation of less than 5 inches. Daily temperature swings of 40° Fahrenheit (F) can occur, with lows in the winter below or near freezing temperatures. Precipitation extremes are also common, with variations of 80 percent in annual precipitation (WRCC, 2020). Summer thunderstorms can drop more precipitation on a site in one event than the mean yearly precipitation for that location. High winds can occur, with peak wind velocities above 50 mph not being uncommon and winds of 100 mph occurring yearly (BLM, 2005).

Vegetation

Vegetation in the Mojave Desert region where the project site 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 scrub (16,398 square miles), Mojave mixed woody scrub (including Joshua tree 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 agriculture 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 (*Aspidoscelis tigris*), desert spiny lizard (*Sceloporus magister*), gopher snake (*Pituophis catenifer*), glossy snake (*Arizona elegans*), and Mojave rattlesnake (*Crotalus scutulatus*). Bird species common to the region include common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), house finch (*Haemorhous mexicanus*), loggerhead shrike (*Lanius ludovicianus*), and red-tailed hawk (*Buteo jamaicensis*). Mammal species typical of the area include white-tailed antelope ground squirrel (*Ammospermophilus leucurus*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*), California

ground squirrel (*Otospermophilus beechyi*), and bat species including California myotis (*Myotis californicus*), western small-footed myotis (*Myotis ciliolabrum*) and western pipistrelle (*Pipistrellus hesperus*).

Sensitive Natural Communities

Sensitive natural communities are designated by CDFW, or occasionally in local policies and regulations, and are generally considered to have important functions or values for wildlife and/or are recognized as declining in extent and/or distribution. These communities are considered threatened enough to warrant some level of protection. 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 by the State.

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 western Mojave Desert is largely composed of a variety of non-marine sedimentary, pyroclastic, and volcanic rocks, and some marine sediments along the San Andreas fault zone. The project site is located on a broad alluvial slope called a bajada, and is comprised of a network of alluvial fans, active channels, dormant channels, abandoned channels, braided streams, interfluves, and floodplains that emanate from the Tehachapi range. Alluvial fans are gently sloping fan-shaped landforms that form where steep, confined mountain streams flow out onto a piedmont plain. They often resemble extended fans when viewed on maps or aerial photographs, but their morphology can be irregular forms bounded laterally by adjacent fans, bedrock outcrops, and relict fan surfaces, among other possibilities (House, 2005). Stream channels are generally subject to flow path uncertainty due to rapid diversion of one channel to another in response to blockages and changes in sediment accumulation from previous flow events (CDFG, 2010). This region of the Mojave Desert is characterized by low precipitation, which rarely allows for surface runoff in the highly porous soils and colluvium. Parent material from mountain sources is generally only mobilized to lower fan areas during localized major storm events. Streams in this region are generally ephemeral to intermittent, and only flow in response to rain events. Because of the high infiltration rates of the sediments, consistent stream flow usually only occurs after periods of steady rain, typically during a wet winter. Heavy floods produce visually definable channels in streambeds, and localized flood events can produce overbank flow transporting sediment and debris onto the floodplain.

The South Lahontan Hydrologic Region is bound to the north by the drainage divide between Mono Lake and East Walker River, to the west and south by the Sierra Nevada, San Gabriel, San Bernardino and Tehachapi Mountains, and to the east by the State of Nevada. Drainage for most of the watershed in the region is under-ground. Along with the arid climate, this accounts for the presence of many dry lakebeds or playas in the region.

The Antelope Valley Hydrologic Unit is a closed basin situated within the western Mojave Desert, with a system of Rosamond, Buckhorn, and Rogers dry lakes as the central watershed terminus. Rosamond,

Buckhorn, and Rogers Lakes and their tributaries function as an isolated intrastate watershed system and are non-jurisdictional waters of the United States (USACE, 2013).

Wildlife Movement Corridors

Wildlife migration corridors are areas that connect suitable habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features (e.g., canyon drainages, ridgelines, or areas with vegetation cover) provide corridors for wildlife travel. Wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high-population areas; and facilitate genetic diversity. Disturbance to wildlife corridors, particularly as a result of human disturbance and development, can cause harm to migrating species, cause species to exceed local population thresholds, and/or prevent healthy gene flow between populations.

Based on a review of existing scientific documentation pertaining to habitat linkages in the project region (i.e., at a landscape-scale), the predominant movement paths include the Tehachapi Connection (White and Penrod, 2012) and the Sierra Madre-Castaic Connection (Penrod et al., 2005). The Tehachapi Connection links the Sierra Nevada and Sierra Madre Mountains. This connection includes much of Tejon Ranch and runs along the northwestern edge of the Antelope Valley from Quail Lake to Red Rock Canyon State Park. Similarly, the Sierra Madre-Castaic Connection links the Castaic Range, located south of the project site, to points west in Los Padres National Forest. Combined, these two connections serve as the primary linkage for most terrestrial wildlife moving from Angeles National Forest and the Sierra Nevada rather than across the floor of the Antelope Valley. Both of these primary linkages are located greater than eight miles to the northwest and southwest of the project site, and are not expected to be impacted by project development.

The primary goal of the California Desert Connectivity Project is to identify areas where maintenance or restoration of ecological connectivity is essential for conserving the unique biological diversity of California's deserts, and to inform land management, land acquisition, habitat restoration, and stewardship in connectivity zones (Penrod et al., 2012). The California Desert Connectivity Project has identified 23 "crucial linkages", each defined by a pair of landscape blocks that should remain connected (Penrod et al., 2012). Designated crucial linkages do not include the project site or surrounding areas; however, a linkage planning area is proposed approximately 15 miles (24 km) to the east of the project site, connecting the San Gabriel Mountains with Edwards Air Force Base. In addition, neither the California Essential Habitat Connectivity Project (Spencer et al., 2010), nor any of South Coast Wildlands' Missing Linkages studies (South Coast Wildlands, 2008) identify the project site or areas immediately surrounding the project site as essential connectivity areas.

Local Setting

The project site and surrounding land are relatively flat and exhibit little topographic relief. The project site gently slopes from the northwest to the southeast with an elevation of 2,710 feet above mean sea level (msl) in the north and northwest portion of the project site, to 2,475 feet above msl in the southeast portion of the project site. Soils generally consist of loose to very dense sand with variable amounts of silt and clay. The project site consists mostly of native desert scrub vegetation communities. Existing developments in the vicinity of the project site include renewable energy facilities, including the Willow Springs Solar Project, the Antelope Valley Solar Project, and North Rosamond Solar Project, renewable energy supporting infrastructures, rural access roads, paved roads, and scattered rural residences. Los Angeles Department of

Water and Power (LADWP) Barren Ridge – Rinaldi Transmission Line also runs immediately adjacent to the project site.

Plant Communities

Six vegetation communities and land cover types were identified within the project site during the biological surveys conducted in 2017, 2018, and 2019, as detailed along with their respective acreages in **Table 4.4-1**, *Vegetation Community and Land Cover Types on the Project Site*. The mapped vegetation communities and land cover types were defined using nomenclature from the Federal Geographic Data Committee and National Vegetation Classification Standards in support of the Desert Renewable Energy Conservation Plan (Menke et al., 2016). The vegetation communities present were mapped using a minimum mapping unit of 0.25 acres. A total of 62 plant species were identified on the project site or within the 500-foot survey buffer during site surveys and a complete list of these species is provided in **Table 4.4-2**, *Plant Species Observed*. A description of the vegetation communities and land cover types are provided below the table.

TABLE 4.4-1: VEGETATION COMMUNITY AND LAND COVER TYPES ON THE PROJECT SITE

	Chaparral Solar		Rabbitbrush Solar		Total	
Vegetation Community or Land Cover Type	**Acres**	**%**	**Acres**	**%**	**Acres**	**%**
Alkaline Mixed Scrub	147	19.0	25	4.0	**172**	**12.2**
California Annual and Perennial Grassland	336	43.4	24	3.8	**360**	**25.6**
Creosote Bush Scrub	183	23.6	392	62.0	**575**	**40.9**
Developed	6	0.8	16	2.5	**22**	**1.6**
Rabbitbrush Scrub	98	12.4	0	0	**98**	**7.0**
White Bursage Scrub	4	0.5	175	27.7	**179**	**12.7**
Total	**774**	**100**	**632**	**100**	**1,406**	**100**

SOURCE: WEST, 2019, WEST, 2020.

TABLE 4.4-2: PLANT SPECIES OBSERVED

Scientific Name	Common Name	Special Status
	GYMNOSPERMS	
Ephedraceae - Ephedra family		
Ephedra nevadensis	Nevada ephedra	
Ephedra viridis	Mormon tea	
	EUDICOTS	
Asteraceae – Sunflower family		
Ambrosia dumosa	White bur-sage	
Artemisia tridentata	Common sagebrush	
Arctium minus	Common burdock	

TABLE 4.4-2: PLANT SPECIES OBSERVED

Scientific Name	Common Name	Special Status
Chaenactis fremontii	Fremont's pincushion	
Chamomilla suaveolens	Pineapple weed	
Ericameria linearifolia	Interior goldenbush	
Ericameria nauseosa	Rubber rabbitbrush	
Gutierrezia sp.	Snakeweed	
Lasthenia californica	California goldfields	
Malacothrix glabrata	Desert dandelion	
Stephanomeria pauciflora	Few flower wire-lettuce	
Xylorhiza tortifolia	Mojave-aster	
Boraginaceae – Borage family		
Amsinckia menziesii	Menzie's fiddleneck	
Cryptantha sp.	Cryptantha	
Myosotis sp.	Forget-me-not	
Pectocarya recurvata	Arch nutted comb bur	
Pectocarya setosa	Round-nut pectocarya	
Phacelia vallis-mortae	Death Valley phacelia	
Brassicaceae – Mustard family		
* *Brassica tournefortii*	Saharan mustard	
Lepidium fremontii	Desert pepperweed	
Lepidium lasiocarpum	Shaggyfruit pepperweed	
* *Sisymbrium altissimum*	Tumble mustard	
Stanleya sp.	Prince's plumes	
Cactaceae – Cactus family		
Cylindropuntia sp.	cholla	
Opuntia basilaris var. *basilaris*	Beavertail cactus	
Chenopodiaceae – Goosefoot family		
Atriplex canescens	Four-wing saltbush	
Atriplex confertifolia	Spiny saltbush	
Atriplex polycarpa	Allscale saltbush	
Grayia spinosa	Spiny hopsage	
* *Kochia scoparia*	Common red sage	
Krascheninnikovia lanata	Winter fat	
Sarcobatus vermiculatus	Black greasewood	

TABLE 4.4-2: PLANT SPECIES OBSERVED

Scientific Name	Common Name	Special Status
Euphorbiaceae – Spurge family		
Euphorbia albomarginata	White margin spurge	
Fabaceae – Legume family		
Astragalus mohavensis	Mohave locoweed	
Lupinus sp.	Lupine	
Geraniaceae – Geranium family		
* *Erodium cicutarium*	Redstem filaree	
Eschscholzia californica	California poppy	
Lamiaceae – Mint family		
Salvia carduacea	Thistle sage	
Salvia pachyphylla	Blue sage	
Orobanchaceae – Broomrape family		
Castilleja sp.	Indian paintbrush	
Polemoniaceae – Phlox family		
Gilia sp.	Gilia	
Polygonaceae – Buckwheat family		
Eriogonum fasciculatum	California buckwheat	
Eriogonum inflatum	Desert trumpet	
Eriogonum sp.	Buckwheat	
Solanaceae – Nightshade family		
Datura wrightii	Wright's jimsonweed	
Lycium pallidum	Pale desert-thorn	
Solanum xanti	Nightshade	
Zygophyllaceae – Caltrop family		
Larrea tridentata	Creosote bush	
MONOCOTS		
Agavaceae - Century Plant family		
Yucca brevifolia	Western Joshua tree	SC
Liliaceae - Lily family		
Calochortus striatus	Alkali mariposa lily	CRPR 1B.2
Poaceae – Grass family		
* *Bromus madritensis* ssp. *rubens*	Foxtail brome	
* *Bromus tectorum*	Cheat grass	
* *Festuca myuros*	Rattail fescue	
* *Hordeum marinum*	Seaside barley	
* *Poa annua*	Annual blue grass	

TABLE 4.4-2: PLANT SPECIES OBSERVED

Scientific Name	Common Name	Special Status
Poa secunda	One-sided bluegrass	
* *Schismus barbatus*	Old han schismus	
Stipa comata	Needle-and-thread	
Stipa hymenoides	Indian rice grass	
Themidaceae – Brodiaea Family		
Dipterostemon capitatus	Blue dicks	

LEGEND:

* Non-native or invasive species

Special Status:

Federal
- FE = Endangered
- FT = Threatened

State
- SE = Endangered
- ST = Threatened
- SC = Candidate for Listing

CRPR (California Rare Plant Rank):
- 1A. Presumed extinct in California and elsewhere
- 1B. Rare or Endangered in California and elsewhere
- 2A. Presumed extinct in California, more common elsewhere
- 2B. Rare or Endangered in California, more common elsewhere
- 3. Plants for which we need more information – Review list
- 4. Plants of limited distribution – Watch list

Threat Ranks
- .1 = Seriously endangered in California
- .2 = Fairly endangered in California
- .3 = Not very endangered in California

SOURCE: WEST, 2019, WEST, 2020.

Alkaline Mixed Scrub

Alkaline mixed scrub communities often occur as a mosaic on the landscape with creosote bush and other scrub communities, but typically occupy topographically lower areas (e.g., micro depressions, swales, playas) with finer textured soils. These soils typically have a slightly higher alkalinity and may be somewhat saline. Although more closely spaced than creosote bush scrub, stands of alkaline mixed scrub range from relatively open to dense, and typically decrease spacing with an increase in available soil moisture. This vegetation community can be found on all three sites of the project site. Common alkaline mixed scrub species include several species of saltbush (e.g., allscale [*Atriplex polycarpa*], shadscale [*A. confertifolia*], four-wing [*A. canescens*], rabbitbrush [*Chrysothamnus nauseosus*], hopsage [*Grayia spinose*], and winter fat [*Krascheninnikovia lanata*]). A variety of understory grass and forb species may be present, and composition and density are site-dependent.

California Annual and Perennial Grassland

California annual and perennial grasslands are characterized by an evenly distributed herbaceous layer of native and nonnative herbs and grasses. This vegetation community is dominant on the Chaparral Solar site and is found in smaller percentages on the other two sites. Species characteristic of this vegetation community include fiddleneck, California poppy (*Eschscholzia californica*), California goldfields (*L. californica*), monolopia (*Monolopia lanceolata*), tidy tips (*Layia platyglossa*), tickseed (*Coreopsis calliopsidea*), dotseed plantain (*Plantago erecta*), and small fescue (*Vulpia microstachys*).

Creosote Bush Scrub

Mojave creosote bush scrub communities are dominated by widely spaced creosote bush with a sparse understory of annual plant species. They are typically found on alluvial fans, dry slopes, and valleys with well-drained soils. This vegetation community can be found on all three sites of the project site but is the dominant community within the Rabbitbrush Solar site. White bursage and Mormon tea (*Ephedra* spp.) are common shrub associates. Land use practices can have a significant effect on the herbaceous (i.e., grass and forb) understory vegetation composition. For example, excessive grazing by sheep can result in a preponderance of non-native annual grasses. This is not uncommon for such habitats in the Antelope Valley region. Scattered western Joshua trees (*Yucca brevifolia*) occur within portions of the creosote bush scrub in the project site, but they do not occur at a density high enough to consider them a woodland community.

Developed

Developed areas on the project site include residential houses and associated outbuildings. The only developed areas within the project site are a single residence on each of the Rabbitbrush Solar and Chaparral Solar sites totaling 16 and 6 acres (2.5 percent and 0.8 percent), respectively.

Rabbitbrush Scrub

Any single or combinations of species of rabbitbrush are dominant shrubs of this vegetation community. This vegetation community is only found on the Chaparral Solar site of the project site. Rubber rabbitbrush (*Ericameria nauseosa*) and Cooper's goldenbush (*E. cooperi*) dominate this community. Rabbitbrush scrub occurs frequently on dry slopes or flats in the High Desert Plains. Associated species include chaparral shrubs such as buckwheat (*Eriogonum* spp.) and dry and alkaline grasses and forbs.

White Bursage Scrub

In the white bursage scrub community, white bursage is greater than 1 percent cover, creosote bush is less than 1 percent cover, and no other species has equal or higher cover (Thomas et al., 2004). This community is only found on the Rabbitbrush Solar site of the project site. White bursage scrub communities occur within washes, alluvial fans, bajadas, upland slopes, rocky hills, and stabilized sand fields, where sandy soils are present (CNPS, 2018).

Wildlife Species

A total of 55 species of wildlife were detected, the majority of which were birds, followed in species richness by reptiles and mammals. A complete list of species observed during project surveys is provided in Appendix E-1 of this EIR.

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 Endangered Species Act (FESA) or California Endangered Species Act (CESA). Other species have been designated as special-status on the basis of

adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities and/or special districts to meet local conservation objectives. Special-status 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 FESA or the 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 CRPR 2B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act [NPPA]) or Sections 2062 and 2067 (CESA) of the California Fish and Game Code (CFGC), and are eligible for state listing. Many CRPR 4 species do not meet the definitions of special-status plants but may be significant locally and are recommended for consideration under CEQA (CNPS, 2001);
>
> Species covered under an adopted National Community Conservation Planning Act/Habitat Conservation Plan (HCP) or Desert Renewable Energy Conservation Plan;
>
> Wildlife designated by the CDFW as "species of special concern" or "special animals";
>
> Wildlife "fully protected" in California (CFGC Sections 3511, 4700, and 5050);
>
> Wildlife species protected as "fur-bearing mammals" (CFGC Section 4000 et seq.);
>
> Native desert plants protected under the California Desert NPPA (California Food and Agriculture Code Sections 80001–80006, Division 23);
>
> Species and open lands that are identified in the Kern County General Plan (Kern County, 2009) and the Willow Springs Specific Plan (Kern County, 2008);
>
> Avian species protected by the Migratory Bird Treaty Act (MBTA) and CFGC (Sections 3500–3516).

It should be noted that most avian species are afforded certain protections by the MBTA and CFGC (Sections 3500–3516). However, many of these, including some raptors, are common species and are not considered special status on that basis alone.

A complete list of special-status plant and wildlife species that have the potential to occur on the project site is provided in **Table 4.4-3**, *Special-Status Species of Concern with Potential to Occur on the Project Site*. **Table 4.4-3**, *Special-Status Species of Concern with Potential to Occur on the Project Site*, summarizes the special-status plant and wildlife species that were evaluated for their potential to occur within the project site. Species with no potential to occur (i.e., "Not Expected", Table 4.4-3) due to the project's location outside of the species known range or a lack of suitable habitat were excluded from further analysis. The "Potential to Occur" categories indicated in **Table 4.4-3**, *Special-Status Species of Concern with Potential to Occur on the Project Site,* are defined as follows:

> **Not Expected:** The project site and/or immediate area do not support suitable habitat for a particular species or is outside of the known species range; therefore, the project is not expected to impact this species.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Plants						
Allium howellii var. *clokeyi*	Mt. Pinos onion	None	None	1B.3	Restricted to a narrow range of coastal sage scrub habitat in the Transverse Range, in the foothills around Mount Pinos.	**Not Expected.** No suitable habitat onsite. Nearest occurrence on Tehachapi South quadrangle, at least 7 miles northwest of site.
Astragalus hornii var. *hornii*	Horn's milk-vetch	None	None	1B.1	Found in meadows and seeps, playas, or lake margins. Prefers alkaline soils. Occurs between 196 and 2,788 feet. Blooms from May to October.	**Not Expected.** No suitable habitat onsite. Known occurrence within Willow Springs quadrangle.
Astragalus preussii var. *laxiflorus*	Lancaster milk-vetch	None	None	1B.1	Found in Chenopod scrub. Blooms from March to May.	**Low.** Suitable habitat may be present, but historic occurrence within Lancaster West quadrangle presumed extirpated.
Calochortus palmeri var. *palmeri*	Palmer's mariposa lily	None	None	1B.2	Mostly occurs in wetland habitat, though also occurs in yellow pine forest or chaparral at low-elevations in the foothills of the Sierra Nevada and Transverse Ranges.	**Not Expected.** No suitable habitat onsite. Nearest occurrence on Tehachapi South quadrangle, at least 6 miles northwest of site.
Calochortus striatus	alkali mariposa lily	None	None	1B.2	Inhabits alkaline meadows and ephemeral washes within chaparral, chenopod scrub, and Mojavean desert scrub. Occurs between 229 and 5,232 feet. Blooms from April to June.	**Present.** Documented on Chaparral Solar site during 2019 field surveys; CNDDB contains known occurrences within Willow Springs and Little Buttes Quadrangles.
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	None	SE	1B.1	Found in the coastal sage scrub and valley and foothill grasslands. Occurs between 492 to 4,002 feet. Blooms from April to July.	**Not Expected.** No suitable habitat onsite. Known occurrence within Lake Hughes quadrangle.
Chorizanthe parryi var. *parryi*	Parry's spineflower	None	None	1B.1	Found in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland (sandy or rocky openings). Occurs between 275 to 4,002 feet. Blooms from April to June.	**Not Expected.** No suitable habitat onsite. Known occurrence within Lancaster West quadrangle.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Cryptantha clokeyi	Clokey's cryptantha	None	None	1B.2	Occurs in rocky, sandy, or gravelly soils in Mojavean desert scrub in the northwestern Mojave Desert. Occurs between 1,968 to 4,265 feet. Blooms in April.	**Moderate.** Suitable habitat present onsite. Known occurrences on Fairmont Butte, Lake Hughes, and Del Sur quadrangles.
Delphinium recurvatum	recurved larkspur	None	None	1B.2	This perennial plant is commonly found in chenopod scrub, valley and foothill grassland and cismontane woodland. It is most common on sandy or clay alkaline soils. It flowers from March to May, and it ranges in elevation from 10 to 2,592 feet.	**Moderate.** Suitable habitat present onsite. Known occurrences within Soledad Mountain quadrangles.
Diplacus pictus	Calico monkeyflower	None	None	1B.2	Found within broadleaved upland forest and cismonte woodland in granitic and disturbed areas. Blooms from March to May and ranges in elevation from 328 to 4,692 feet.	**Not Expected.** No suitable habitat onsite. Known occurrence within Tehachapi South quadrangle.
Eriastrum rosamondense	Rosamond eriastrum	None	None	1B.1	This annual herb occurs in alkaline hummocks, often sandy. Around Chenopod scrub openings and vernal pool edges. The blooming period is between April and May and it ranges in elevation from 2,296 to 2,345 feet.	**Moderate.** Suitable habitat may be present. Known occurrences within Rosamond and Lancaster West quadrangles.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None	None	1B.1	This species is found in coastal marshes and swamps, and playas and vernal pools in the interior of California. It flowers between February and June, and it ranges in elevation from 0 to 4,002 feet.	**Not Expected.** No suitable habitat onsite. Known occurrence within Tehachapi South quadrangle.
Layia heterotricha	pale-yellow layia	None	None	1B.1	Occurs in open clay soils, grassland and foothill woodland habitat. It flowers between March and June, and it ranges in elevation from 984 to 5,594 feet.	**Not Expected.** No suitable habitat present. Known occurrences within Tehachapi South, Monolith, and Mojave quadrangles.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia	None	None	2B.2	Found in desert dunes, Great Basin scrub, and sandy Sonoran Desert scrub. Occurs between 2,296 and 5,298 feet. Blooms from April to May.	**Moderate.** Suitable habitat may be present onsite. Known occurrences within Soledad Mountain and Rosamond quadrangles.
Monardella linoides ssp. *oblonga*	Tehachapi monardella	None	None	1B.3	Found in upper and lower montane coniferous forest, pinyon and juniper woodland. Occurs between 2,952 and 8,103 feet. Blooms from June to August.	**Not Expected.** No suitable habitat onsite. Known occurrences within Tehachapi South, Monolith, and Tylerhorse Canyon quadrangles.
Navarretia fossalis	Spreading navarretia	FT	None	1B.1	Found in chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, and vernal pools. Blooms from April to June and it ranges in elevation from 98 to 2,148 feet.	**Moderate.** Suitable habitat may be present onsite. Known occurrences within Lake Hughes quadrangle.
Navarretia peninsularis	Baja navarretia	None	None	1B.2	Found in lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland, and chaparral. Occurs between 4,921 and 7,545 feet. Blooms from May to August.	**Not Expected.** No suitable habitat onsite. Known occurrences within Tehachapi South quadrangle.
Opuntia basilaris var. *brachyclada*	Short-joint beavertail	None	None	1B.2	Found in Joshua tree woodland, chaparral, Mojavean desert scrub, pinyon and juniper woodland. Blooms from April to August and is found in elevation from 1,394 to 5,905 feet.	**Moderate.** Suitable habitat may be present. Known occurrences within Del Sur and Lake Hughes quadrangles.
Opuntia basilaris var. *treleasei*	Bakersfield cactus	FE	SE	1B.1	Occurs in sandy or gravelly soils within chenopod scrub, cismontane woodland, and valley and foothill grassland. Blooms from April to May in elevation from 394 to 4,757 feet.	**Not Expected.** Suitable habitat may be present, however, closest known occurrence is greater than 25 miles to the northwest.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Saltugilia latimeri	Latimer's woodland gilia	None	None	1B.2	This annual herb occurs in rocky or sandy, often granitic, areas and sometimes in washes in chaparral, Mojavean desert scrub or Pinyon and juniper woodland. It flowers between March and June, and it ranges in elevation from 1,312 to 6,233 feet.	**Moderate.** Suitable habitat may be present. Known occurrence within Monolith quadrangle.
Sidalcea neomexicana	Salt spring checkerbloom	None	None	2B.2	Occurs in alkaline, mesic soils within chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas. Occurs between 49 and 5,020 feet. Blooms from March to June.	**Moderate.** Suitable habitat may be present. Known occurrence within Lake Hughes quadrangle.
Viola pinetorum var. *grisea*	grey-leaved violet	None	None	1B.2	This perennial herb occurs in meadows and seeps of subalpine coniferous forests, and upper montane coniferous forests at elevation from 4,900 to 11,150 feet. It blooms from April to July.	**Not Expected.** No suitable habitat onsite. Known occurrence within Tehachapi South quadrangle.
Yucca brevifolia	Western Joshua tree	None	SC	None	This monocotyledonus tree, native to the arid southwest, is mostly confined to the geographic range of the Mojave desert, occurring between 1,300 and 5,900 feet.	**Present.** Scattered, widely-spaced western Joshua trees are present throughout portions of the project site, particularly within creosote bush scrub communities.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status [b]	Habitat Requirements	Potential to Occur and Explanation
Reptiles						
Anniella pulchra	Northern California legless lizard	None	CSC	N/A	Occurs in coastal dune, valley-foothill, chaparral, and coastal scrub habitat types within sandy or loose loamy soils with a high moisture content. Common in Coast Ranges from Antioch/Contra Costa County south to the Mexican border. Elevation from near sea level to about 6,000 feet above mean sea level (amsl). Spotty occurrence in San Joaquin Valley from San Joaquin County south, west slope of the southern Sierra, the Tehachapi Mountains west of the desert, and the mountains of Southern California.	**Not Expected.** Suitable, moist soils not likely present within the project site and is on the edge of the species known range. Closest occurrence is approximately 4.5 miles northwest of the project site.
Gopherus agassizii	desert tortoise	FT	ST	N/A	Terrestrial tortoise that inhabits burrows on sandy flats, rocky foothills, alluvial fans, canyons, washes and other open areas throughout the Mojave and Sonoran deserts below 3,500 feet in elevation. Species is most active from March through June and from September through October. Populations north and west of the Colorado River are listed as federally threatened. Known to be absent within the Coachella Valley west of the Salton Sea. Additionally, known to be present in the northern, eastern and western rims of the Coachella Valley within the foothills of the Little San Bernardino Mountains, the Painted and Whitewater Hills, and the San Jacinto and northern Santa Rosa Mountains.	**Not Expected.** Habitat is moderately suitable for the species but project site is located on the edge of the species known range. Focused desert tortoise surveys were conducted in 2017 and 2018 with no desert tortoise or their sign observed. The closest known occurrence is 2.8 miles to the northeast of the project site.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Phrynosoma blainvillii	coast horned lizard	None	CSC	N/A	Found in arid and semi-arid climate conditions in chaparral and coastal sage scrub habitats, primarily below 2,000 feet in elevation. Critical factors are the presence of loose soils with a high sand fraction; an abundance of native ants or other insects, especially harvester ants (*Pogonomyrmex* spp.); and the availability of both sunny basking spots and dense cover for refuge.	**Not Expected.** Elements of suitable habitat are present within the project site, however, the project lies outside of the species known range and documented occurrences are generally to the west of the project site closer to the Tehachapi Mountains.
Birds						
Agelaius tricolor	tricolored blackbird	None	ST, CSC	N/A	Occurs in open country in western Oregon, California, and northwestern Baja California. Breeds near freshwater, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow (*Salix* spp.), blackberry (*Rubus* spp.), wild rose (*Rosa* spp.), tall herbs and forages in grassland and cropland habitats. Seeks cover for roosting in emergent wetland vegetation, especially cattails (*Typha* spp.) and tules (*Scirpus* spp.), and also in trees and shrubs.	**Not Expected.** No suitable nesting habitat is present within the project site of surrounding area.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Aquila chrysaetos	golden eagle	None	FP	N/A	Forages in grassland and open savannah of many types. It tolerates considerable variation in topography and elevation. It prefers to hunt moderate-sized prey, especially California Ground Squirrels (*Spermophilus beecheyi*) and rabbits, but will occasionally take larger prey, such as Mule Deer (*Odocoileus hemionus*) fawns. Nests on cliffs of all heights, and occasionally in large trees in open areas, in rugged, open habitats with canyons and escarpments.	**Moderate.** Year-round resident and migrant in region. No suitable nesting habitat within project site (closest known nest is eight miles away), however, eagles may occasionally forage within the project site.
Asio otus	long-eared owl	None	CSC	N/A	Inhabits riparian or other thickets with relatively small densely canopied trees for roosting and nesting. In winter, occupy dense stands of vegetation adjacent to large tracts of open habitat for foraging.	**High.** Suitable foraging habitat occurs throughout the project site. Nesting/roosting habitat may be present within windrows adjacent to the project site. This species was documented roosting during 2010 surveys at the adjacent Rosamond Solar Project.
Athene cunicularia	burrowing owl	None	CSC	N/A	Inhabits open, dry grasslands, prairie, desert floor, and open scrub habitats. Commonly found in areas altered by man, including flood control channels and basins, abandoned or open fields, agricultural and livestock areas, and road cuts. In California, commonly uses ground squirrel burrows. Also known to utilize piles of broken concrete, old pipes, and other abandoned structures for burrows.	**Present.** Suitable habitat present throughout the project site. Known to breed and winter in the Antelope Valley. Burrows with sign of previous burrowing owl activity were observed on Chaparral Solar site during 2017 field surveys, and an active burrow was identified within the 50-meter survey buffer of the discontinuous 10-acre Chaparral Facility site parcel during 2018 surveys. Numerous occurrences for this species is found within the project vicinity.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Buteo swainsoni	Swainson's hawk	None	ST	N/A	Suitable breeding habitat consists of areas containing Joshua trees, Fremont cottonwoods, or other large trees located adjacent to open fields, including agricultural fields. Forages in open desert, grasslands, agricultural fields, or livestock pastures.	**Present.** Suitable nesting and foraging habitat occurs throughout the project site. Three active nests were recorded within five miles of the project during 2017 surveys. No active nests were recorded in 2018 or 2019. Eleven historic nest locations have been documented within five miles of the project site.
Charadrius montanus	mountain plover	None	CSC	N/A	Occurs in short grasslands, plowed fields with little vegetation, and open sagebrush areas. Nests in short-grass prairies in the western Great Plains and Rocky Mountain states, but winters along the Pacific and Gulf Coasts and in the Southwest. In California, generally winters in the Sacramento, San Joaquin, Panoche, Antelope, and Imperial valleys, with very small numbers occurring in the coastal region.	**Present.** Suitable habitat present for wintering and migrant individuals. Observed on Rabbitbrush Solar site during 2017 field surveys.
Circus hudsonius	northern harrier	None	CSC	N/A	Species hunts low to the ground mostly in open country such as marshes and grasslands, nesting on the ground. Prey diversity is high though small mammals are most commonly taken. It remains fairly common in open country with low human disturbance during migration and in winter.	**Present.** Suitable foraging and wintering habitat present, but project site lacks nesting habitat for this species. Observed on Chaparral Solar site during 2017 field surveys.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Gymnogyps californianus	California condor	FE	None	N/A	Occurs in semi-arid mountainous areas in California, including the southern Sierra Nevada, Tehachapi Mountains, Transverse Ranges, and the Coast Ranges from Santa Clara County south to Los Angeles County. Forages in open habitats, including grasslands, foothill chaparral, and savannahs, and feeds solely on carrion. Nests and roosts in cliffs on ledges and cavities and in large trees and snags.	**Not Expected.** No nesting/roosting habitat present within the project site and is outside of the species' current and historic range. Critical habitat for the species is present in Tehachapi mountains 14 miles west of the project site.
Lanius ludovicianus	loggerhead shrike	None	CSC	N/A	Found as a common resident and winter visitor throughout California in lowland and foothill habitats, where it frequents open areas with sparse shrubs and trees.	**Present.** Suitable nesting and foraging habitat present throughout the project site. Observed within the Rabbitbrush Solar site during 2017 field surveys. Numerous occurrences are documented in the project vicinity.
Toxostoma lecontei	LeConte's thrasher	None	CSC	N/A	Year round resident. Inhabits sparsely vegetated flats, dunes, washes, alluvial fans or gently rolling hills with a high cover of *Atriplex* or *Opuntia*.	**Present.** Suitable nesting and foraging habitat present through the project site. Observed foraging on the Rabbitbrush Solar site during 2017 field surveys. Several occurrences are documented in the project vicinity and within the Chaparral Solar site.
Mammals						
Antrozous pallidus	pallid bat	None	CSC	N/A	Inhabits arid grassland, shrubland, and woodlands from sea level to sub-alpine mixed conifer forest. Roosts in rock crevices, buildings, and bridges.	**High.** Limited suitable roosting habitat is present, but this species is likely to forage throughout the project site.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Corynorhinus townsendii	Townsend's big-eared bat	None	CSC	N/A	This species generally roost in caves, mines, and buildings. It forages in a variety of habitats including, mixed desert scrub, primarily in riparian corridors, closely following creeks or streams, and edge habitats eating insect prey.	**High.** No suitable roosting habitat is present, but this species is likely to forage throughout the project site.
Onychomys torridus tularensis	Tulare grasshopper mouse	None	CSC	N/A	Low open scrub and desert scrub. Historic range extended along foothills and floor of southern San Joaquin Valley from western Merced and eastern San Benito counties, east to Madera County, and south to the foothills of the Tehachapi and San Emigdio mountains.	**Not Expected.** Suitable habitat may be present but is on edge of the species range. Closest occurrences are approximately 3.5 and 4.5 miles to the northwest of the project site.
Perognathus alticolus inexpectatus	Tehachapi pocket mouse	None	CSC	N/A	Habitat not well defined; generally found in grasslands, desert scrub, pine woodlands, and fallow fields. Burrows for cover and nesting. From Tehachapi Pass, west to Mount Pinos, and south to Elizabeth and Quail Lakes, at elevations from 3,379 feet to 6,004 feet amsl.	**Not Expected.** Suitable habitat may be present but is on edge of the species range. Closest occurrence is approximately 3 miles to the northwest of the project site.
Taxidea taxus	American badger	None	CSC	N/A	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	**Present.** Suitable habitat present throughout the project site. Potentially active burrows with sign of recent used documented within Rabbitbrush and Chaparral Solar sites during 2017 field surveys. Occurrence for this species is document just outside the eastern boundary of the Chaparral Solar site.

TABLE 4.4-3: SPECIAL-STATUS SPECIES OF CONCERN WITH POTENTIAL TO OCCUR ON THE PROJECT SITE

Scientific Name	Common Name	Federal Status[a]	State Status[a]	CRPR Status[b]	Habitat Requirements	Potential to Occur and Explanation
Vulpes macrotis arsipus	desert kit fox	None	None[c]	N/A	Inhabits creosote bush scrub and dry grassland habitats throughout the Mojave desert.	**Present.** Suitable habitat present throughout the project site. Active natal den documents on Chaparral solar site and escape dens were observed on Chaparral and Rabbitbrush Solar sites during 2017 field surveys.
Xerospermophilus mohavensis	Mohave ground squirrel	None	ST	N/A	Land supporting desert shrub vegetation within the geographic range of the species. It is restricted to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo counties and is rare throughout its range. Populations in southwestern San Bernardino County appear to be extirpated.	**Not Expected.** Project falls outside of the current known range for this species. Closest occurrence is documented eight miles to the east of the project site.

[a] **Status Codes**

Federal
FE = Federally listed; Endangered
PE = Proposed Endangered
FT = Federally listed; Threatened
FC = Federal Candidate for Listing
FSC = Federal Species of Concern
D = Delisted

State
ST = State listed; Endangered
SE = State listed; Threatened
SC = State Candidate for Listing
R = Rare (Native Plant Protection Act)
CSC = California Species of Special Concern
FP = California Fully Protected Species

[b] **California Rare Plant Ranks (CRPR)**

1A = Plants presumed extinct in California
1B = Plants rare, threatened, or endangered in California and elsewhere
2 = Plants rare, threatened, or endangered in California, but more common elsewhere
3 = Plants about which we need more information
4 = Limited distribution (Watch List)
0.1 = Seriously endangered in California
0.2 = Fairly endangered in California
0.3 = Not very endangered in California

[c] The desert kit fox is protected by CDFW as a fur-bearing animal under California Code of Regulations Title 14, Section 460.

SOURCE: WEST, 2019, WEST, 2020.

Low: Records for this species exist within 5 miles of the project site, but the habitats or environmental conditions needed to support the species do not exist or are very limited, isolated, or highly disturbed within the project site. Low potential to occur may also be used when species records are very old (pre-1980s), regardless of habitat conditions within the project site. For special-status plants, low potential may also be used when the plant was not observed during focused rare plant surveys, and its lack of detectability may be due to environmental limitations such as drought or annual variability in germination (i.e., bulbiferous perennials, annuals).

Moderate: Records for this species exist within 1–5 miles of the project site; however, habitats or environmental conditions needed to support the species are limited within the project site. Species records indicate few previously documented occurrences within 1 mile of the project site.

High: Records for this species exist within 1 mile of the project site, and habitats or environmental conditions needed to support the species exist within the project site. Species records indicate previously documented occurrences within 1 mile of the project site.

Present: Species observed on or near the project site during focused surveys or other site visits.

Special-Status Plants

Twenty-two special-status plant species were identified in the literature review and database search as historically occurring in the region, 11 of these species were determined not expected to occur because of a lack of suitable habitat and/or absence during focused surveys conducted within the appropriate blooming period. **Table 4.4-3**, *Special-Status Species of Concern with Potential to Occur on the Project Site*, identifies the regulatory status, habitat requirements, and blooming period for each plant species that has some potential to occur 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.

Three plant species, beavertail cactus (*Opuntia basilaris* var. *basilaris*), cholla (*Cylindropuntia* sp.), and Joshua tree are known to occur on the project site and are covered under the California Desert Native Plant Act (CDNPA).

One special-status plant species was detected within the project site during the spring 2019 surveys: alkali mariposa lily (WEST 2019). Additionally, western Joshua tree, a state candidate for listing as a threatened species, is known to occur throughout the project site. This species was approved for candidacy under CESA on September 22, 2020, following completion of the initial 2017-2019 surveys conducted for the project, and during the drafting of this EIR. No other special-status plant species were identified within the project site or have a high potential to occur; however, eight species were determined to have a moderate potential to occur: Clokey's cryptantha (*Cryptantha clokeyi*), recurved larkspur (*Delphinium recurvatum*), Rosamond eriastrum (*Eriastrum rosamondense*), sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisarum*), spreading navarretia (*Navarretia fossalis*), salt spring checkerbloom (*Sidalcea neomexicana*), short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), and Latimer's woodland gilia (*Saltugilia latimeri*). One species had a low potential to occur, Lancaster milk-vetch (*Astragalus preussii* var. *laxiflorus*). Twelve special-status species were determined to have no potential to occur because suitable habitat is not present or it was on the edge of the species known range. The two special-status species observed onsite are described further below.

Alkali Mariposa Lily. The alkali mariposa lily, a CRPR 1B.2 species, is a bulbiferous perennial herb found in alkaline and mesic areas within chaparral, chenopod scrub, Mojavean desert scrub, and meadow and seep

habitats. It occurs in Inyo, Kern, Los Angeles, San Bernardino, and Tulare counties at elevations ranging from 230 and 5,240 feet above msl. It flowers from April through June.

Appropriate suitable habitat and alkaline areas for alkali mariposa lily occurs within the project site. This species was observed during 2019 rare plant focused surveys within the expanded Chaparral Solar site (the portion within Section 14, T9N/R14W, SBBM, as shown on Figure 11 of the BRTR (WEST, 2019) and consists of approximately 400 individuals distributed relatively evenly throughout the mapped population.

Western Joshua Tree. The western Joshua tree was recently (September 22, 2020) approved as a candidate for listing as a threatened species under CESA. The species is monocotyledonus tree, native to the arid southwest, with populations occurring in southeastern California, western Arizona, southern Nevada, and southwestern Utah, as well as Northwestern Mexico. Western Joshua trees are primarily confined to the geographic range of the Mojave Desert, occurring between 1,300 and 5,900 feet. Appropriate habitat occurs throughout the project site, particularly within creosote scrub vegetation communities. During 2017-2019 vegetation mapping and botanical surveys, scattered, widely-spaced western Joshua trees were documented as occurring throughout portions of the project (WEST, 2019). While individual western Joshua trees are protected as a candidate species under CESA, Joshua tree woodland is considered a sensitive plant community by CDFW; however, western Joshua trees occurring within the project site do not occur at a density high enough to consider them a distinct woodland community. To qualify as Joshua tree woodland, western Joshua trees must be evenly distributed, not scattered and clumped, and must be at least 1% of total cover (Thomas et al., 2004).

Prompted by the anticipated approval of the species for candidacy, a reconnaissance level survey of western Joshua trees within the project site was conducted on September 18-22, 2020 (see BRTR; Appendix E-1 of this EIR). The results of this overview survey indicated that there are less than 1 percent western Joshua tree cover on the Rabbitbrush site and less than 0.5 % cover on the Chaparral site, in both cases assuming a 12-foot radius calculated per tree for estimated cover area. Prior to ground disturbing activities, a complete census survey to CDFW guidelines in place will be performed and all applicable western Joshua tree candidate species CDFW mitigation requirements will be met.

Special-Status Wildlife

Based on the literature review and database search, 20 special-status wildlife species (3 reptiles, 10 birds, and 7 mammals) have been historically recorded within the vicinity of the project site. Of these, eight were determined not expected to occur on the project site due to lack of suitable habitat or range constraints and absence during protocol surveys. Species with potential to occur are listed in **Table 4.4-3**, *Special-Status Species of Concern with Potential to Occur on the Project Site*, 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.

Of the 20 special-status wildlife species identified in **Table 4.4-3**, *Special-Status Species of Concern with Potential to Occur on the Project Site*, as having the potential to occur within the project site, 8 species were determined to be present: burrowing owl, Swainson's hawk, mountain plover (*Charadrius montanus*), northern harrier (*Circus hudsonius*), loggerhead shrike, LeConte's thrasher (*Toxostoma lecontei*), American badger (*Taxidea taxis*), and desert kit fox (*Vulpes macrotis arsipus*). The long-eared owl (*Asio otus*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*) were determined to have a high potential to occur within the project site. One species, golden eagle (*Aquila chrysaetos*), was determined to have a moderate potential to occur within the project site. No species were determined to

have a low potential to occur within the project. Although desert tortoise was determined as not expect to occur on the project, a discussion for this species was included because project-specific surveys were conducted. Species that are present or have high potential to occur are also described further below.

Reptiles

Desert Tortoise. The Mojave population of the desert tortoise, including those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah and in the Sonoran (Colorado) Desert in California, was listed as a threatened species by CDFW in August 1989 (CDFW, 2019) and by USFWS in April 1990 (USFWS, 1990). The "take" of these species as defined by the FESA and CESA, respectively, requires incidental take permits from the USFWS and the CDFW, as applicable. The project lies at the western extent of the species range within the Western Mojave Recovery Unit. The closest desert tortoise critical habitat to the project lies approximately 24 miles (38.6 kilometers [km]) to the east.

Desert tortoises occur at elevations ranging from below sea level to 7,300 feet (2,225 km) where they occupy a variety of habitats from flats and gentle slopes dominated by creosote bush scrub at lower elevations to rocky slopes in blackbrush (*Coleogyne ramosissima*) and juniper (*Juniperus californica*) woodlands at higher elevations (USFWS, 2011). Typical habitat for the desert tortoise in the Mojave Desert is characterized as creosote bush scrub below 5,500 feet (1,677 meters), where precipitation ranges from 2 to 8 inches, the diversity of plants is relatively high, and production of ephemerals is high. Tortoises most commonly occur on gently sloping terrain with sandy-gravel soils where there is sparse cover of low growing shrubs and soil friable enough for digging burrows, but firm enough so that burrows do not collapse (USFWS, 2011). As an adaptation for living in a highly variable and often hard desert environment, desert tortoises spend much of their lives in burrows. In late winter or early spring, tortoises emerge from their burrows and typically remain active through the fall, although activity often decreases during summer when tortoises emerge only after summer rains. During periods of activity, tortoises forage on a variety of herbaceous vegetation, particularly grasses and the flowers of annual plants (Luckenbach, 1982) found within native desert scrub habitats such as creosote bush and white bursage scrub. Tortoises are slow-growing and long-lived, requiring 13 to 20 years to reach maturity. The reproductive success of female desert tortoises depends on a variety of factors including environment, habitat, availability of forage and drinking water, and physiological factors (USFWS, 2011).

Although the project site falls within the Western Mojave Recovery Unit boundaries, it is outside of the current known range for the desert tortoise. Historically, desert tortoise may have occurred in the region; however, anthropogenic disturbances in the project vicinity, including agriculture, OHV recreation, roads, utility corridors, energy and residential development, sheep grazing, and illegal trash dumping, appear to have reduced habitat suitability and limited desert tortoise populations in the region. The closest reported desert tortoise occurrence to the project, based on a search of the CNDDB, is a 2006 observation of a single adult tortoise crossing Tehachapi-Willow Spring Road approximately 4.2 miles (6.8 km) northeast of Chaparral Solar site. Additionally, several adult tortoises were recorded approximately 4.5 miles (7.3 km) to the north of Rabbitbrush Solar and Chaparral Solar sites during surveys for the nearby Pacific Wind Energy Project, Catalina Renewable Energy Project, and Avalon Wind Energy Project (WEST, 2019). Protocol-level desert tortoise surveys have been conducted at a number of sites proposed for solar energy development in the immediate vicinity of the project including the Rosamond Solar Project (Ironwood Consulting, 2011a), the Willow Springs Solar Project (Ironwood Consulting, 2011b), the Solar Star 1 and 2 Project (previously the Antelope Valley Solar Project; AECOM, 2010), and the Valentine Solar Project

(SWCA, 2015). No desert tortoises, carcasses, or sign (e.g., scat, burrows, courtship rings, or drinking pallets) were detected at any of these nearby projects.

While no individuals, burrows, or signs of tortoise were observed during 2017, 2018, and 2019 surveys, one small disturbed area measuring approximately 1.2 by 1.0 foot (0.4 by 0.3 meters), which may or may not represent a former desert tortoise pallet, was recorded near the northwest corner of the Rabbitbrush Solar site during the 2019 surveys (as shown on Photograph 10 in Appendix E-1 of this EIR). A pallet is a shallow depression used by tortoises for shelter from heat and predators. While it is not certain that the observed soil depression is an old tortoise pallet or even created by a desert tortoise, it was potentially characteristic of such. The pallet showed no evidence of current or recent use (i.e., within 1–2 years) and no other potential desert tortoise sign (i.e., live tortoises, skeletal remains, scat, tracks, or burrows) were observed throughout the project site.

Based on the preliminary database and literature review, the project falls outside of the current known range for the species, which is generally to the north and east of the project. Based on the USGS desert tortoise habitat model (Nussear et al., 2009), predicted desert tortoise habitat is present within the northern portions of the project site; however, anthropogenic disturbances have likely limited the suitability of these habitats for desert tortoise in the region, as evidenced by the lack of desert tortoise detections in the immediate vicinity of the project. Desert tortoise is not expected to occur within the project site.

Birds

Long-Eared Owl. The long-eared owl, a California Species of Special Concern, is an uncommon yearlong resident throughout most of California. In the Mojave Desert, it is described as an uncommon resident distributed widely but locally, including within the Antelope Valley (Garrett and Dunn, 1981). Long-eared owls nest in conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or are adjacent to grasslands, meadows, or shrubland (Marks et al., 1994). Key habitat elements include dense cover for nesting and roosting, suitable nest platforms, and open foraging areas. Long-eared owls nest mainly in old corvid or hawk nests but also in woodrat and squirrel nests, mistletoe brooms, or natural platforms (e.g., debris piles) in trees (Bloom, 1994).

During surveys conducted for the Rosamond Solar Project in 2010 (Ironwood Consulting, 2011a), a long-eared owl was observed roosting in a salt cedar wind break, approximately two miles west of Rabbitbrush Solar site. Suitable foraging habitat is present throughout the project site, with potential nesting and roosting habitat present within the few dense windrows found within the solar facilities and surrounding area. Based on the documented occurrence of long-eared owls in proximity to the project and the presence of suitable habitat, the species has a high potential to occur within the project site.

Burrowing Owl. Burrowing owl, a California Species of Special Concern, occurs in a wide range of mostly open habitats in California, including grasslands, shrub-steppe, deserts, pastures, and agricultural areas. Their range within California extends from Redding south to San Diego, east through the Mojave Desert, and West to San Francisco and Monterey. Little is understood about the migratory movements of burrowing owl. Breeding populations from the northern range of the species are apparently migratory, though Southern California populations are probably year-round residents or exhibit opportunistic seasonal movements (Thomsen, 1971). Increases in winter population sizes within Southern California are probably the result of immigration of owls from more northerly areas (Coulombe, 1971). Male burrowing owls that are year-round residents in Southern California may overwinter in burrows within nesting areas, as this allows them to retain possession of their burrows and territories, as well as maintain the burrows (WEST, 2019).

Typical burrowing owl habitat includes short vegetation and the presence of small mammal burrows. The key characteristics of suitable habitat are moderately low and sparse vegetation, a prey base of small mammals and insects, and burrows or similar sites (e.g., rock piles) for shelter. This species occurs at low densities in the Antelope Valley, where it is present year-round. Focused burrowing owl surveys were conducted in 2017, 2018, and 2019 throughout the project site. No burrowing owls or sign of currently active burrows were recorded on any of the three solar properties; however, burrows with sign of past use by burrowing owls were observed on Chaparral Solar site. Additionally, one active burrowing owl burrow was identified within the 50-meter survey buffer of the discontinuous 10-acre Chaparral Facility site parcel (i.e., at the northwest corner of Holiday Avenue and 110th Street West) in the spring and summer of 2018.

Swainson's Hawk. Swainson's hawk was listed as a threatened species by CDFW in April 1983 (CDFW, 2019); it has no federal listing. Swainson's hawk is relatively common and breeds throughout the western United States (west of the Great Plains) but has a severely limited population in California and, particularly, in Southern California. Although this species historically bred in small numbers in Southern California, its known breeding population is currently isolated to the Antelope Valley in Los Angeles and Kern counties. Swainson's hawk is a medium-sized migratory raptor that prefers open grasslands and agricultural fields for foraging, typically nesting nearby in isolated trees or rows of trees, particularly those near water sources.

Historically, Swainson's hawk was known to nest throughout the entire state of California, with the exception of the Sierra Nevada, northern Coast Ranges, and Klamath mountains, and some of the interior portions of the Mojave and Colorado deserts where suitable nest trees are uncommon. Historic nesting habitat typically encompassed open grasslands and large trees along riparian zones. However, the destruction and conversion of grasslands, denudation of riparian areas, pesticide use, shooting, fire, and use of fire suppressants have all contributed to a loss of suitable habitat or a loss of hawks in general.

Swainson's hawk typically arrive in California between early March and early May. Site fidelity is high among adults, with many birds returning to the same territory each year (CDFW, 2016). In the Antelope Valley region of Southern California, nests are typically placed in Joshua trees, roadside trees, and windrow or perimeter trees along agricultural areas (CEC and CDFG, 2010). Foraging habitat within the Antelope Valley includes pastures, alfalfa fields, fallow fields, row crops, new orchards, and grain crops. Courtship and nesting begins in April, although eggs may not be laid until May. After an approximately 35-day incubation period and an additional 38- to 46-day nestling period, the young fledge (Bechard et al., 2010); most birds in California have fledged by mid-August. Swainson's hawk begin migrating south in late August and early September and typically arrive on their wintering grounds by November.

Based on focused surveys conducted in 2017, 2018, and 2019, there were three Swainson's hawk nests within five miles of the Chaparral Solar Facility and Rabbitbrush Solar Facility sites, however the nests were found to be inactive in 2018 and 2019. The nearest Swainson's hawk nest to the project, based on the 2017-2019 survey results, is located approximately 2.1 miles (3.4 km) south of the discontinuous Chaparral 10-acre parcel. This nest is located in a large pine (*Pinus* sp.) tree along Avenue A and was also found to be active in 2014 during survey conducted for the Willow Springs Solar Project (Ironwood Consulting, 2014). The next closest Swainson's hawk nest to the project is located in a windrow tree near a residential area approximately 2.6 miles (4.2 km) southeast of the discontinuous Chaparral 10-acre parcel. The third nest is located in a large Joshua tree approximately 3.1 miles (5.0 km) north of the Chaparral Solar site. This nest is in the vicinity of a historic Swainson's hawk nest identified during 2011 and 2014 surveys conducted for the Willow Springs Solar Project (Ironwood Consulting, 2011b, 2014). The three nests, identified in 2017, are located 3.5 miles (5.6 km) to the northeast, and 3.2 and 3.7 miles (5.1 and 6.0 km) to the southeast of the Rabbitbrush facility. The Chaparral Solar site contains suitable foraging habitat but

has limited nesting habitat where only a few scatted Joshua trees are large enough to support this species' nest. The Rabbitbrush Facility contains desert scrub communities, which are considered marginal foraging quality for Swainson's hawk and nesting habitat is limited to a few larger Joshua trees. Neither facility contains, or is adjacent to, agricultural areas which are the preferred foraging habitat for the species.

Mountain Plover. Mountain plover is a California Species of Special Concern. The species is a winter resident of California's Central Valley, as well as the foothill valleys west of San Joaquin Valley, Imperial Valley, plowed fields of Los Angeles and San Bernardino counties, and along the central Colorado River valley. Mountain plovers occur on short grasslands and plowed fields with little vegetation, and open sagebrush areas, often roosting in depressions such as ungulate hoof prints and plow furrows (Knopf and Rupert, 1995).

Based on information from the CNDDB, mountain plovers have been documented at several locations to the south of the project, the closest of which is approximately 1.4 miles (2.3 km) south of the discontinuous 10-acre parcel for Chaparral Solar. Mountain plovers are unlikely to forage or roost within the project site due to the absence of suitable grassland and agricultural habitat within the project or on adjacent lands. One individual was observed on the Rabbitbrush Solar site during 2017 field surveys.

Northern Harrier. The northern harrier, a California Species of Special Concern, occurs throughout most of California and is a year-round resident of the Antelope Valley. The species typically occurs in meadows, grasslands, open rangelands, desert sinks, and fresh and saltwater emergent wetlands; it is seldom found in wooded areas. Northern harriers nest on the ground in shrubby vegetation, usually along at the edge of a marsh or other wetland; however, they may also nest in grasslands, grain fields, or on sagebrush flats several miles from water. Northern harriers feed primarily on voles and other small mammals, birds, frogs, small reptiles, crustaceans, and insects (WEST, 2019).

Northern harriers are not expected to nest within the project site due to the absence of suitable nesting habitat; however, the species likely forages throughout the project site, primarily in the winter or during spring and fall migration. An individual was observed on the Chaparral Solar site during 2017 field surveys.

Loggerhead Shrike. Loggerhead shrike is a California Species of Special Concern, occurring in most of California and absent only in the Sierra Nevada and Cascade Mountain ranges. The species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. This species was reported during the field surveys and could forage and nest over much of the project site.

LeConte's Thrasher. The LeConte's thrasher, a California Species of Special Concern, is an uncommon to rare, local resident in Southern California Deserts. The species occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats, and may also occur in Joshua tree habitat with scattered shrubs. The CNDDB contains several records of LeConte's thrasher in the project vicinity, including one occurrence within Chaparral Solar site. Suitable nesting and foraging habitat is present within the project site, and the species is likely to occur year-round. An individual was observed on the Rabbitbrush Solar site during 2017 field surveys.

Mammals

American Badger. The American badger, a California Species of Special Concern, is a carnivore in the weasel family (Mustelidae). The American badger is also afforded protection as a fur-bearing mammal under CFGC Section 4000 et seq. The species ranges throughout California excepting the humid forested regions in the State's extreme northwest. They are most abundant in drier open stages of most shrub, forest,

and herbaceous habitats. American badgers require friable soils and open, uncultivated ground where they can dig burrows for shelter. They prey mainly on burrowing rodents such as ground squirrels and kangaroo rats. American badgers have large home range sizes, ranging up to 100 miles^2 (Apps et al., 2002).

No American badgers were observed within the project site or along surveyed portions of the collector line corridor; however, one potentially active badger burrow was located within the Rabbitbrush Solar site. Chaparral Solar site had two burrows with evidence of recent badger activity (i.e., freshly disturbed soil apron and lateral claw marks) recorded within 0.3 miles of the site. The entire project site contains suitable American badger foraging habitat. Due to the presence of recent badger activity at one burrow on the project site, the species is assumed present.

Desert Kit Fox. Desert kit fox is not a federally or state-listed species and does not receive protection under the FESA, but is protected under California Code of Regulations Title 14, Section 460, which prohibits take of this species at any time. 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. If any active or potential dens are found on the project site, consultation with CDFW regarding appropriate avoidance and minimization measures would be warranted. 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. Focused burrow surveys were conducted from early to late April for desert kit fox with follow-up surveys conducted in May and June. One suitable burrow with fresh sign was observed on the Rabbitbrush Solar site and another just north of the site. One natal den was observed on the Chaparral Solar site and multiple suitable burrows with fresh sign were observed. Due to the presence of a natal den and fresh sign at multiple suitable burrows, the kit fox is determined to be present on the project site.

Pallid and Townsend's Big-Eared Bat. Both pallid and Townsend's big-eared bats are designated as a California Species of Special Concern. The pallid bat occupies a wide variety of habitats in California including grasslands, shrublands, woodlands, and forests (BCI, 2018). The species is most common is open, dry habitats with rocky areas for roosting. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Maternity colonies form in early April and may have 12 to 100 individuals. The pallid bat is known for its unique habit of feeding almost entirely from the ground. Common prey of pallid bats includes crickets, beetles, grasshoppers, and scorpions (BCI, 2018).

Townsend's big-eared bat is also found throughout California, with the exception of subalpine and alpine habitats. Their most typical habitat is arid western desert scrub and pine forest communities (BCI, 2018). In the spring and summer, females form maternity colonies in mines, caves, or buildings, while males roost

individually (Pierson, 1998). Both species of bat have been documented as occurring on Soledad Mountain, located approximately 8 miles to the northeast of the project (WEST, 2019). Townsend's big-eared bats were observed exiting several of the mines on the Mountain, although no large concentrations were discovered. Pallid bats were recorded acoustically at Soledad Mountain and likely roost in the rock crevices on the Mountain. Roosting habitat (e.g., caves, mines, or rock crevices) for both bat species is absent from the project site; however, due to the presence of suitable foraging habitat throughout the project site, both species have a high potential to occur.

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. No sensitive natural communities are found within or adjacent to the project site.

The CDFW considers Joshua tree woodland to be a sensitive natural community; however, the individual, scattered western Joshua trees present throughout the project site do not occur at a high enough density to be considered a distinct woodland community. Based on the CDFW- and CNPS-accepted definition for this vegetation alliance, western Joshua trees must be evenly distributed, not scattered and clumped, and must be at least 1% of total cover to qualify as Joshua tree woodland (Thomas et al. 2004). Based on reconnaissance level surveys conducted in 2020, there are less than 1% cover of western Joshua trees on the Rabbitbrush facility and less than 0.5% cover on the Chaparral facility.

Critical Habitat

USFWS has not designated or proposed any critical habitats on or near the project site under the FESA (16 U.S. Code [USC] 1533(a)(3)). Critical habitat is designated for the survival and recovery of federally listed endangered and/or threatened species. Protected habitat includes areas for foraging, breeding, roosting, shelter, and movement or migration.

Wildlife Movement Corridors

In recent decades, conserving landscape connectivity has received increasing recognition as key strategy to protect biodiversity and maintain viable ecosystems and wildlife populations (Rosenberg et al., 1997). The project site lies near the center of the western Antelope Valley, which is generally flat with few well-defined canyons, riparian corridors, or other corridor-like topographic features that would serve to channel the movement of terrestrial wildlife species. As such, wildlife movement across the Valley is likely diffuse, with roads, fences, and agriculture serving as barriers or filters to movement.

While the existing studies do not call out the project site or surrounding areas as essential connectivity areas, the project site may be used for more local wildlife movement. The project site does contain areas of relatively undisturbed desert vegetation that are used by species on a smaller scale; however, these habitats are fragmented by roads, fences, rural residences, agricultural fields, and solar energy developments which likely limits the project site as a significant corridor for wildlife movement. Scattered small washes run throughout the project site; however, riparian vegetation to support concentrations of wildlife and to facilitate wildlife movement is absent. Likewise, while habitats within the project site do provide stopover

and wintering habitat for birds, there are no riparian habitats or other sources of water that would attract concentrations of birds during migration. Fenced areas, particularly the existing solar energy developments in areas immediately adjacent to the project, likely limit the movement of larger terrestrial wildlife species (e.g., kit fox, badger, coyote) through the area.

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 Lahontan Regional Water Quality Control Board (RWQCB). The definitions of the extent of regulatory agency jurisdictions are described in Subsection 4.4.3, *Regulatory Setting*.

The project site is located within the Antelope-Fremont Valleys Watershed in the Antelope Valley Hydrologic Unit, within the South Lahontan Hydrologic Region (Huffman-Broadway Inc., 2020). The Lahontan Basin has no outlet to other watersheds and is internally drained. The USACE has determined that isolated waters within the South Lahontan Hydrologic Region are not considered "waters of the United States" and, therefore, are not be subject to regulation under the federal Clean Water Act (CWA), which includes the washes/drainages located on the project site. In addition, no areas were identified on the project site that exhibit characteristics of wetlands as defined by USACE (Huffman-Broadway Inc., 2020).

Two ephemeral drainages and a floodplain watercourse was found on the project site, one in the northern boundary of the Chaparral Solar site and another on the Rabbitbrush Solar site. In addition, three floodplain watercourse areas formed adjacent to the ephemeral drainage channel in the northern portion of the Rabbitbrush Solar site. Surface water flow in the vicinity of the project site is generally to the southeast. No riparian vegetation occurred in association with these water features.

As isolated non-wetland drainages that do not establish connectivity with navigable waters, the water features on the project site are not considered waters of the U.S. However, various water features occurring on the project site may be classified as Waters of the State and therefore may fall under the jurisdictional authority of the RWQCB. Additionally, CDFW may also take jurisdiction over the water features, associated bank habitat, and active floodplains associated with these features.

4.4.3 Regulatory Setting

Federal

Endangered Species Act of 1973 (USC Title 16, Sections 1531–1543)

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 share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations 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 at CFR Title 50, Sections 217, 220, and 222 for species under the jurisdiction of the National Marine Fisheries Service.

FESA Section 4(a)(3) and (b)(2) requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in FESA Section 3(5)(A): (1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special management consideration or protection; and (2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

Migratory Bird Treaty Act (USC Title 16, Sections 703–711)

The MBTA, first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (USC Title 16, Section 703). The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

Bald and Golden Eagle Protection Act of 1940 (USC Title 16, Section 668, enacted by 54 Statute 250)

The Bald and Golden Eagle Protection Act 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 volume 72, page 31132; 50 CFR 22.3).

Federal Clean Water Act (USC Title 33, Sections 1251–1376)

The federal 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 in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

State

California Endangered Species Act (CFGC 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 CWA Section 401, 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 CWA. Filling, dredging, or excavation of isolated waters may constitute a discharge of waste to waters of the state and if so, then prospective dischargers are required to file a Report of Waste Discharge to obtain Waste Water Discharge Requirements as authorization for that fill or waiver thereof from the RWQCB.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under CWA Section 401.

California Fish and Game Code

Section 460. Under this section of the CFGC, desert kit fox may not be taken at any time.

Sections 1600–1616. 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. CFGC Section 2080 states that "No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to CFGC Section 2081, 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 CFGC 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 4000–4003. 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 ESA 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 effort 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 (CFGC Sections 1900–1913)

California's NPPA requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. The project proponent is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

California Desert Native Plant Act (California Food and Agricultural Code Sections 800071–80075)

The CDNPA affords protection to certain native desert plant species to make the harvest, transport, sale, or possession of these species unlawful unless a permit is first obtained. It restricts harvesting of the following

plants, except for educational or scientific purposes under a permit issued by the commissioner of the county in which the native plants are growing:

> All species of the genus Burseraceae family (such as elephant tree [*Bursera microphylla*], saguaro cactus [*Carnegiea gigantean*], barrel cactus [*Ferocactus acanthodes*], and panamint dudleya [*Dudleya saxosa*])

The CDNPA also restricts harvesting of the following species, except under a permit issued by the commissioner of the sheriff of the county in which the native plants are growing:

> All species of the agave family (Agavaceae)
>
> All species of the genus *Prosopis*
>
> All species of the genus *Cercidium*
>
> All species of the cacti family Cactaceae, besides saguaro and barrel cactus, which are protected as described above
>
> All species of the ocotillo and candlewood family Fouquieriaceae
>
> Catclaw (*Acacia greggii*), desert-holly (*Atriplex hymenelytra*), smoke tree (*Dalea spinose*), and desert ironwood (*Olneya tesota*)

Local

Kern County General Plan

The Kern County General Plan identifies the federal, state, and local statutes, ordinances, or policies that govern the conservation of biological resources that must be considered by Kern County during the decision-making process for any project that could affect biological resources.

The Land Use, Open Space, and Conservation Element of the Kern County General Plan states that the element provides for a variety of land uses for future economic growth while also ensuring the conservation of the County's agricultural, natural, and resource attributes. Section 1.10, *General Provisions*, provides goals, policies, and implementation measures 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.

Willow Springs Specific Plan

The project site occurs within the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in 1992 and amended in 2008 as part of the Land Use, Open Space, and Conservation Element of the Kern County General Plan. Its goals, policies, and standards are compatible with those of the General Plan, but are tailored to the particular needs of the expanded Willow Springs area. The biological resources-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project are outlined below (Kern County, 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included.

Resource

Policy

Policy 3: To ensure compliance with applicable State and federal laws and to protect the biological resources present in the Specific Plan area.

Mitigation/Implementation Measures

Measure 15: Where possible, project development within the Specific Plan Update area shall be designed to avoid displacement of destruction of Joshua tree habitat, to the satisfaction of the Kern County Agricultural Commissioner's Office. Areas adjacent to the woodland shall have a 50-foot setback from the Joshua tree plants. Within that setback, a native plant cover should be restored to natural habitat values to serve as a bugger, if such plant cover is not present.

Measure 16: A Joshua Tree Preservation and Transportation Plan shall be developed by the applicants for each parcel where Joshua trees are located onsite. The plan shall be submitted to the Kern County Agricultural Commissioner's office for review and approval to grading permit issuance.

Measure 23: A Joshua Tree Preservation and/or Transplantation Plan shall be developed by applicants of discretionary projects for each parcel where Joshua trees are located onsite. The plan shall be submitted to the Kern County Agricultural Commissioner for review and approval prior to grading permit issuance.

Measure 24: Prior to issuance of any grading permits for individual projects, individual project applicants shall consult with the Regional Water Quality Control Board, State Department of Fish and Game and/or U.S. Fish and Wildlife Service, and the Army Corps of Engineers to identify potentially required permits. Compliance with this measure will be confirmed through the submittal of a letter (in conjunction with submittal of grading permit applications) to the County demonstrating compliance with the above-mentioned agencies.

Measure 25: Prior to issuance of permits, individual project applicants shall obtain appropriate permits as determined necessary by the Regional Water Quality Control Board, U.S. Fish and Wildlife Service, State Department of Fish and Game, and Army Corps of Engineers.

Biological Resources

Policies

Policy 1: Where possible, development shall be designated to avoid displacement of sensitive species.

Policy 2: Focused surveys shall be conducted by a County-approved biologist to establish the presence or absence of sensitive species.

Policy 3: Initial development within the area covered under the Willow Springs Specific Plan, when possible, will be directed towards previously impacted areas.

Kern County Zoning Ordinance

Chapter 19.81, Dark Skies Ordinance (Outdoor Lighting)

In November 2011, Kern County approved a Dark Skies Ordinance. The purpose of this ordinance is to maintain the existing character of Kern County by requiring a minimal approach to outdoor lighting, recognizing that excessive illumination can create a glow that may obscure the night sky, and that excessive illumination or glare may constitute a nuisance. The ordinance provides requirements for outdoor lighting within specified unincorporated areas of Kern County in order to accomplish the following objectives:

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

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

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

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

Kern County Development Standards

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

4.4.4 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, BRTR (WEST, 2019), and the Federal and State Aquatic Resources Report (Huffman-Broadway Inc., 2020). 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.

Reconnaissance and focused surveys including USFWS protocol surveys for desert tortoise (*Gopherus agassizii*), burrowing owl (*Athene cunicularia*) and Swainson's hawk (*Buteo swainsonii*), and rare plants were conducted on the project site from spring 2017 through spring 2019. Prompted by the anticipated listing of western Joshua tree as a state candidate species, a reconnaissance survey of western Joshua trees was completed at the project site in September 2020 (Appendix E-1). The impact analyses presented here address potential biological resources located on the project site based on results of field surveys detailed in Appendix E of this EIR.

Thresholds of Significance

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

A project would have a significant adverse effect on biological resources if it:

a. Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or the USFWS;

b. Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or the USFWS;

c. Has a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Project Impacts

Impact 4.4-1: The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or 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, interference with reproductive success, introduction of invasive species, and habitat degradation. Potential impacts to special-

status plants and wildlife from construction, operation and maintenance, and decommissioning are discussed below.

Construction

Special-Status Plants

The project site contains four special-status or protected plant species: alkali mariposa lily, western Joshua tree, cholla, and beavertail cactus. Additionally, the project site contains habitat for eight other special-status plants with a moderate potential to occur onsite: Clokey's cryptantha, Rosamond eriastrum, sagebrush loeflingia, spreading navarretia, Latimer's woodland-gilia, salt spring checkerbloom, short-joint beavertail, and recurved larkspur. Direct impacts to the special-status plants and their habitat may include mortality of individuals as a result of permanent removal or damage to root structures during the construction phase of the project through activities like clearing vegetation and removal of suitable habitat, trampling by construction vehicles or personnel, or unauthorized collection. Other direct impacts may include clearing and grading activities that could disturb and compress soils, potentially destroying seed banks and preventing or reducing future utilization of the area by these species. Indirect impacts may include construction-related dust, erosion, runoff, and introduction of invasive species on disturbed soils. Increased dust during construction activities could decrease a plant's ability to photosynthesize. This could result in diminished reproduction or loss of special-status plants. Construction equipment, vehicles, or imported materials could introduce and spread non-native invasive plant species within the project area, which could outcompete special-status plants for resources such as water and space. In addition, suitable habitat could become monotypic, thereby reducing quality and diversity of native vegetation communities onsite.

Direct and indirect impacts to alkali mariposa lily, western Joshua tree, cholla, and beavertail cactus would be considered significant. Similar direct and indirect impacts to Clokey's cryptantha, Rosamond eriastrum, sagebrush loeflingia, spreading navarretia, Latimer's woodland-gilia, salt spring checkerbloom, short-joint beavertail, and recurved larkspur would also be considered significant, if present. As proposed, western Joshua trees and protected cactus occur throughout the project site and removal will be mitigated, as applicable by obtaining a harvest permit, creation and submittal/approval of a Joshua Tree Preservation plan, and adherence to applicable State (CDFW) protection and mitigation requirements. To reduce potential significant impacts to special-status plant species, Mitigation Measures MM 4.4-1 through MM 4.4-5, and MM 4.4-14 would be implemented. With the implementation of these mitigation measures, which include monitoring, worker environmental awareness training, preconstruction clearance survey, general biological resources avoidance measures, preconstruction special-status plant surveys, and creation of a Joshua Tree Preservation Plan impacts would be less than significant.

Other special-status plants that have a low potential to occur include Lancaster milk-vetch (*Astragalus preussii* var. *laxiflorus*). The potential impacts could be mitigated to a less-than-significant level through implementation of avoidance and protection measures detailed in Mitigation Measure MM 4.4-4. With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-5, and MM 4.4-14 impacts to special-status plant species would be less than significant.

Special-Status Wildlife

Special-status wildlife species confirmed present for the project site include burrowing owl, Swainson's hawk, mountain plover, northern harrier, loggerhead shrike, LeConte's thrasher, American badger (sign only), and desert kit fox. Additionally, the following three special-status species have a high potential to

occur onsite: long-eared owl, pallid bat, and Townsend's big-eared bat. While mountain plover, northern harrier, pallid bat, and Townsend's big-eared bat may occur as migrants or foraging birds/bats on the project site, no suitable nesting habitat for these bird species or roosting habitat for these bat species are present on the project site, and thus no significant impacts to these species would occur. Only one special-status species has a moderate potential to occur onsite, the golden eagle. However, this species may migrate or forage through the project site and its vicinity, but no suitable nesting habitat such as cliff faces or desert buttes are present, therefore, 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 project could result in the direct impacts of these special-status species if any are present. Individual discussions for species determined to have the potential for significant impacts are further discussed below.

Burrowing Owl. 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. Based on focused surveys conducted in 2017, 2018, and 2019, one active breeding burrow within the50-meter survey buffer of the discontinuous 10-acre Chaparral Facility site parcel was observed on the project site. Additional, burrowing owl sign was observed within the project site. Besides direct impacts to burrows and habitat, construction activities could directly impact occupied burrows resulting in injury or mortality to individual owls. Birds flying away from burrows could collide with machinery or vehicles and are more likely to be predated by other animals such as red-tailed hawks and coyotes. 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 burrow. Other indirect impacts include vehicle emissions, dust, habitat degradation from introduction of non-native plants or other factors. Any adverse direct or indirect impacts to burrowing owls as a result of construction would be considered significant under CEQA. However, implementation of Mitigation Measures MM 4.4-2 through MM 4.4-4, MM 4.4-6, and MM 4.4-8 which include monitoring, education awareness training, preconstruction clearance survey, general biological resources avoidance measures, preconstruction burrowing owl surveys, and nesting bird surveys, would reduce the potential impacts. Mitigation Measure MM 4.9-2 also requires applying non-toxic herbicide if dens or nests are found. Implementing these mitigation measures would ensure that nesting or foraging burrowing owls impacted during construction are mitigated for. With implementation of these mitigation measures, impacts to burrowing owl would be less than significant.

Swainson's Hawk. Although Swainson's hawks occur in the area, the project site has a low potential to provide nesting habitat for this species. Although the species has had a decreasing presence in this area, Swainson's hawks continue to nest around agricultural areas in the Antelope Valley, with the majority of nests found adjacent to agricultural fields. Swainson's hawks show nest site fidelity and typically forage in suitable habitat adjacent to their nest sites. Although the project site may contain some suitable nesting habitat for Swainson's hawk in a few larger Joshua trees within the site, it is unlikely that this species would nest at the project site given the absence of agricultural fields in the immediate vicinity of the project site. Although site development would result in the permanent loss of creosote bush scrub with smaller amounts of annual and perennial grassland, white bursage scrub, and alkaline mixed scrub, this loss is expected to have a minimal effect, if any, on this species' habitat availability in the immediate area and this reduction in habitat would not be considered a significant impact. The project would have the potential to directly impact this species through mortality or injury of individuals, if not able to fly out of harm's way. Indirect impacts from construction and decommissioning activities include disturbance to nesting individuals related to increase dust, noise, vibrations, and increase human presence. Potential impacts would be avoided through implementation of Mitigation Measure MM 4.4-7, which includes nesting surveys. Potential

impacts would be further reduced through implementation of Mitigation Measures MM 4.4-2 through MM 4.4-4, which include monitoring, education awareness training, preconstruction clearance survey, and general biological resources avoidance measures. With implementation of these mitigation measures, project level impacts to Swainson's hawk would be less than significant.

Loggerhead Shrike, LeConte's Thrasher, and Long-Eared Owl. Loggerhead shrike and LeConte's thrasher were observed during surveys in 2017 and are assumed to be present on the project site. Long-eared owl was not observed during surveys, however, an individual was observed on the adjacent Rosamond Solar Project in 2010. The long-eared owl could potentially nest within the few dense windrows found within the solar facilities and surrounding area. Suitable foraging habitat for all three species is found throughout the project site. Suitable nesting habitat for loggerhead shrike and LeConte's thrasher is found throughout the project site. Direct impacts to all three species could include death or injury to chicks or nest destruction. Adults of all three species are mobile and not susceptible to direct impacts from construction activities. Indirect impacts from construction and decommissioning activities include disturbance to nesting individuals related to increase dust, noise, vibrations, and increase human presence. Additionally, loss of habitat is not expected to be significant because of the abundance of suitable habitat surrounding the project site. These direct and indirect impacts to these species would be considered significant without mitigation. To reduce potential significant impacts to loggerhead shrike, LeConte's thrasher, and long-eared owl, Mitigation Measures MM 4.4-1 through MM 4.4-4 and MM 4.4-8 would be implemented. With the implementation of these mitigation measures which include monitoring, education awareness training, preconstruction clearance survey, general biological resources avoidance measures, and preconstruction nesting bird surveys, impacts would be less than significant.

Desert Tortoise. No desert tortoise individuals, burrows, or other definitive sign (skeletal remains, scat, tracks) were observed during 2017, 2018, and 2019 focused surveys. Given the negative results of the desert tortoise protocol surveys, it's unlikely that desert tortoises are present on the project site. However, impacts are analyzed in the event that desert tortoise moves onto the project site between the time it takes for this document to be finalized and construction implementation. Direct loss of habitat resulting from construction activities would reduce the available amount of habitat in the region for this species, however, the habitat present is marginally suitable and isolated from occupied habitat to the north and east by rural communities and other developments. If present on the project site at the time of construction activities, it is possible that tortoises could be injured or crushed by onsite equipment or vehicles or could experience dehydration if startled by project personnel (resulting in evacuation of their internal water supply). If any tortoises are in burrows and the burrows go undetected, tortoises or their eggs could be crushed during construction activities. Common ravens, a notable predator of juvenile desert tortoises, are common throughout the project site and could injure or kill juvenile desert tortoise if present. Temporary indirect impacts on desert tortoise could occur from construction-related noise and ground vibration, construction-related dust, sedimentation, and habitat degradation. To reduce potential significant impacts to desert tortoise, Mitigation Measures MM 4.4-1 through MM 4.4-4 and MM 4.4-6 would be implemented. With the implementation of these mitigation measures which include monitoring, education awareness training, preconstruction clearance survey, general biological resources avoidance measures, and protocol-level preconstruction survey for desert tortoise, impacts would be less than significant.

Pallid Bat and Townsend's Big-eared Bat. Pallid bat and Townsend's big-eared bat have a high potential to occur (foraging only). Direct impacts to both species include the reduction and loss of vegetation due to construction activities and permanent placement of solar facilities. However, it is likely that both species forage in the project area at low levels due to the low insect production in the desert communities at most

times of the year. Additional suitable foraging habitat would remain surrounding the project site; therefore, there would be no significant impacts to pallid and Townsend's big-eared bat foraging habitat as a result of the project. Indirect impacts could also occur during construction if the bat species are deterred from foraging due to construction-related disturbances, including night-lighting and increase in human presence. However, these species are highly mobile and would be able to avoid any potential indirect impacts. The project site does not contain suitable roosting habitat to support the two bat species; therefore, no specific avoidance and minimization measures are proposed for these species. Both direct and indirect impacts to pallid bat and Townsend's big-eared bat would not be considered significant.

American Badger. Though no individuals were observed, fresh sign at a suspected burrow was documented on the project site. Additionally, the entire project site is considering foraging habitat for the species. Direct impacts to American badger from project construction activities may include permanent and temporary loss of habitat, injure or killing of an individual or young within an occupied burrow, or collisions from project related equipment. This species is locally scarce but within a wide range. Additional suitable habitat would remain surrounding the project site; therefore, there would be no significant impacts to American badger suitable habitat with development of the project. Indirect effects due to displacement of this species could also occur as a result of construction activities associated with the project. These types of potential impacts to this species would be considered significant without mitigation. To reduce potential significant impacts to American badger, Mitigation Measures MM 4.4-1 through MM 4.4-4 would be implemented. With the implementation of these mitigation measures which include monitoring, education awareness training, preconstruction clearance survey, and general biological resources avoidance measures, impacts would be less than significant.

Desert Kit Fox. Desert kit fox sign and burrows, including an active natal den, were observed within and in the vicinity of the project site during 2017 surveys. Direct impacts to the species and its habitat could include the loss of available habitat and potential burrows due to construction activities and increased human presence. Direct impacts on individuals could result from adults or young being crushed in dens or from collisions with vehicles, resulting in injury or death. These types of potential impacts to this species would be considered significant. To reduce potential significant impacts to desert kit fox, Mitigation Measures MM 4.4-1 through MM 4.4-4 would be implemented. With the implementation of these mitigation measures which include monitoring, education awareness training, preconstruction clearance survey, and general biological resources avoidance measures, impacts 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 4.4-8 requires implementation of preconstruction nesting bird surveys as well as avoidance and minimization measures if active nests are found. Mitigation Measure MM 4.9-2 also requires applying non-toxic herbicide if burrows, dens, or nests are found. Impacts to nesting or foraging birds would be less than significant during construction with the implementation of these mitigation measures.

Operations and Maintenance

Direct impacts to special-status species are unlikely to result from project operation and maintenance activities because project construction would remove habitat for special-status species on the project site, although wildlife movement through or around the project site (i.e., wildlife fencing) would still allow limited movement. Additionally, Mitigation Measures MM 4.4-2 and MM 4.4-3 require methods designed to reduce wildlife mortality and impacts, promote long-term project site suitability, and educate onsite personnel. However, maintenance activities within the project site could impact the special-status species if avoidance measures are not implemented. Project operation could result in indirect impacts to wildlife in proximity to the project if nighttime lighting is used. However, the potential indirect impact from nighttime lighting during operation and maintenance would be minimized through compliance with all development standards, the Kern County Zoning Ordinance, and the goals, policies, and implementation measures of the Kern County General Plan. The proposed project would be required to implement Mitigation Measure MM 4.1-5, which requires compliance with Kern County's Dark Skies Ordinance to minimize nighttime lighting in unincorporated areas of Kern County.

Swainson's Hawk, Golden Eagles, and Other Raptors. Potential direct impacts to raptor species from the operations and maintenance phase of the project may occur through the collisions into and/or electrocution from power lines anticipated to be installed throughout the project site but particularly along the proposed collector lines. Raptors may be able to use the solar panels, perimeter fencing, and utility structures surrounding the facilities as perch sites for hunting. While collision/electrocution impacts to the aforementioned raptors are potentially significant, impacts would be reduced through the implementation of Mitigation Measure MM 4.4-9. Mitigation Measure MM 4.4-9 requires power lines to be installed per APLIC standards, reducing the likelihood of collision and/or electrocution from power lines.

The potential for a significant impact to result from general (non-power line) avian collisions at the project site is unlikely. In a review of 13 fatality monitoring studies in three bird conservation regions in California and Nevada, a total of 13 raptor carcasses (of 669 total) were detected including one Swainson's hawk (Kosciuch et al. 2020). Thus, collision risk is low, and is not expected to adversely affect raptor populations. Direct and indirect impacts to Swainson's hawk and other raptors would be less than significant with the implementation of the above mitigation measures.

Migratory Birds. Direct and indirect impacts to avian species may occur during project operation and maintenance through individual collisions with project facilities and equipment including transmission wires, fencing, array structures, and heavy equipment. Such risks are commonplace with most human development activities. The factors that have been empirically demonstrated to result in elevated collision risk at various types of facilities and structures (e.g., wind turbines,) are not present at the project site, which consists of low-height PV arrays and a few structures exceeding the 13-foot height of PV modules, and would incorporate only minimal lighting and adhere to best management practices in an effort to avoid attracting avian species. Thus, while individual impacts may be expected to occur due to collisions with project facilities and equipment, the risk of significant impact to avian populations is minimal. In a review of 13 fatality monitoring studies in three bird conservation regions in California and Nevada, a total of 669 fatalities were documented with 54.71% being songbirds when carcasses were adjusted for detection bias (Kosciuch et al. 2020). The identifiable species that had the highest percentage of bias-adjusted composition across all studies were mourning dove (12.92%), horned lark (11.93%), house finch (8.41%), and western meadowlark (7.78%). Kosciuch et al. (2020) stated that those species have populations that number in the millions in the bird conservation regions where the studies took place. Carcasses of water-associated birds (e.g., herons and egrets) and water obligate birds (e.g., loons and grebes) were found at PV solar facilities

in the Sonoran and Mojave Deserts bird conservation region, where the project is located. However, carcasses of water associates and water obligates were primarily found at sites within 60 miles of the Salton Sea, and the representation of these bird groups in the fatality data decreased or disappeared at sites located away from the Salton Sea. The project is located over 160 miles from the Salton Sea in an area lacking water. Thus, under the pattern presented in Kosciuch et al. (2020) there is a low likelihood of water associate and water obligate bird fatalities at the project.

Factors that determine the risk of avian collisions with man-made structures include the size, height, and specific attributes of structures (guy wires and lighting/light attraction). Other factors include the siting in high-risk areas, frequency of inclement weather, type of development, and the species at potential risk. Such collisions can result in injury or mortality of avian species from electrocution, including in the case of power lines. Collisions with project facilities and equipment would be considered a potentially significant impact under CEQA. Direct and indirect impacts to migratory birds would be less than significant with the implementation of Mitigation Measure MM 4.1-5 (Kern County Dark Sky Ordinance), MM 4.1-6 (minimize glare and spectral highlighting), MM 4.1-7 (non-reflective materials), and MM 4.4-9 (utilization of APLIC guidelines).

Decommissioning

Upon decommissioning of the proposed project, the project site would be disturbed and have some areas of compacted soil (e.g., on roads, laydown yards, and structure foundations). 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. Decommissioning would only directly impact areas that were previously disturbed during project construction; therefore, direct impacts to native habitats and special-status plants are expected to be less than significant. If special-status wildlife re-occupy the project site during operations, these species could be directly impacted by decommissioning, similar to the direct impacts described for construction. Wildlife with the potential to utilize partially-developed habitats and man-made structures include burrowing owls, kit fox, badger, bats, and nesting birds. Burrowing owls are known to use burrows under concrete slabs and along active road berms.

Indirect impacts to biological resources would be similar to those that would occur during construction, but would depend on the resources present adjacent to the project site at the time of decommissioning. Additional indirect impacts could include degradation of adjacent habitat if the site is colonized by invasive species or generates excessive runoff or dust due to a lack of vegetation. Depending on the species and biological resources present within and adjacent to the project site at the time of decommissioning, decommissioning activities could result in significant impacts to biological resources.

However, Mitigation Measures MM 4.4-1, MM 4.4-2, and MM 4.4-3 require biological monitoring, worker education training, and measures for avoidance and protection of biological resources. 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

Implement Mitigation Measures MM 4.1-5 through MM 4.1-7, and MM 4.9-2.

MM 4.4-1: **Biological Monitoring.** Prior to the issuance of grading or building permits and prior to decommissioning, the project operator shall retain a Lead Biologist who meets the qualifications of an Authorized Biologist as defined by U.S. Fish and Wildlife Service to oversee compliance with protection measures for all listed and other special-status species. The Lead Biologist shall be on the project site during construction of perimeter fencing and grading activities throughout the construction phase, and as-needed during decommissioning. The Lead Biologist shall have the right to halt all activities that are in violation of the special-status species protection measures. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk. The Lead Biologist shall have in her/his possession a copy of all the compliance measures and appropriate Plans while work is being conducted on the project site.

MM 4.4-2: **Construction Worker Environmental Awareness Training and Education Program.** Prior to the issuance of grading or building permits and for the duration of construction and decommissioning activities, within one week of employment all new construction workers at the project site, laydown area and/or transmission routes shall attend an Environmental Awareness Training and Education Program, developed and presented by the Lead Biologist. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Environmental Awareness Training and Education Program.

The program shall include information on the life history of the alkali mariposa lily, desert tortoise; burrowing owl; long-eared owl, golden eagle, Swainson's hawk, and other raptors; nesting birds; American badger; desert kit fox; as well as other wildlife and plant species that may be encountered during 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 operator is implementing to protect the species, reporting requirements, specific measures that each worker shall employ to avoid take of wildlife species, and penalties for violation of the federal Endangered Species Act or California Endangered Species Act.

a. An acknowledgement form signed by each worker indicating that Environmental Awareness Training and Education Program has been completed would be kept on record;

b. A sticker shall be placed on hard hats indicating that the worker has completed the Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker;

c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Environmental Awareness Training and Education Program and copies of the signed acknowledgement forms shall be submitted to the Kern County Planning and Community Development Department;

d. The construction crews and contractor(s) shall be responsible for unauthorized impacts from construction activities to sensitive biological resources that are outside the areas defined as subject to impacts by project permits; and

e. An Operation and Maintenance-phase version of the WEAP will be maintained within the onsite O&M facility for review as may be necessary during the life of the project.

MM 4.4-3: Avoidance and Protection of Biological Resources. During construction, operations and maintenance, and decommissioning the project operator shall implement the following general avoidance and protective measures:

a. All proposed impact areas, including solar fields, staging areas, access routes, and disposal or temporary placement of spoils, shall be delineated with stakes and/or flagging prior to construction to avoid natural resources where possible. Construction-related activities outside of the impact zone shall be avoided.

b. The project operator shall limit the areas of disturbance to the extent feasible. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. These areas shall be flagged and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.

c. Spoils shall be stockpiled in disturbed areas that lack native vegetation. Best management practices shall be employed to prevent erosion in accordance with the project's approved stormwater pollution prevention plan (SWPPP). All detected erosion shall be remedied within 2 days of discovery or as described in the SWPPP.

d. To prevent inadvertent entrapment of desert kit foxes, American badgers, or other wildlife during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks. All holes and trenches, whether covered or not, shall be inspected for trapped wildlife at the start and end of each workday. Before such holes or trenches are filled, they shall be thoroughly inspected by the Lead Biologist or approved biological monitor for trapped wildlife. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a listed species is found trapped, all work in the vicinity of the animal shall cease immediately. If the animal is apparently uninjured, then the Lead Biologist shall directly supervise the provision of escape structures and/or trench modification to allow the trapped animal to escape safely. Work shall not resume in the vicinity of the animal, and it shall be allowed to leave the work area and project site on its own. If the listed animal is injured, then the Lead Biologist or approved biological monitor shall immediately contact the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife to identify an individual with the appropriate permit or authorization to handle listed species, who shall bring the animal to a pre-identified wildlife rehabilitation or veterinary facility for care.

e. Burrowing owls, mammals, and nesting birds may use construction pipes, culverts, or similar structures for refuge or nesting. All towers shall be of the monopole variety and all hollow vertical structures, such as solar mount poles, or fencing poles, shall be capped immediately after installation to prevent bird entrapment. Therefore, all construction pipes, culverts, or similar structures with a diameter of 4 inches or more 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 until the Lead Biologist has been consulted and the animal has either moved from the structure on its own accord (for listed species) or until the animal has been captured and relocated (for non-listed species) by the Lead Biologist. If the animal is a listed species, then work shall immediately halt in the vicinity, and the animal shall be allowed to move from the structure and the work area of its own accord. The Lead Biologist will direct work stoppages near the animal to allow it to freely move out of the pipe and away from the work area. Listed species shall not be handled or captured by anyone without the appropriate permit or authorization.

f. 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.

g. 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.

h. A speed limit of 15 miles per hour shall be enforced within the limits of the proposed project.

i. A long-term trash abatement program shall be established for construction, operations and maintenance, and decommissioning. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.

j. Workers shall be prohibited from bringing pets and firearms to the project area and from feeding wildlife.

k. Intentional killing or collection of any plant or wildlife species shall be prohibited.

l. To enable kit foxes and other wildlife (e.g., American badger) to pass through the project site after construction, the security fence, and any permanent interior fencing shall be a wildlife friendly design that meets the goals of allowing wildlife to move freely through the project site during operation, leaving 4- to 7-inch openings or portals in the fence or the fence shall be raised 7 inches above the ground leaving a gap between the fence mesh and the ground. In the latter case the bottom of the fence fabric shall be knuckled (wrapped back to form a smooth edge) to protect wildlife that passes under the fence.

MM 4.4-4: **Preconstruction Clearance Surveys.** During construction and decommissioning, the Lead Biologist or approved biological monitor shall monitor all initial ground-disturbance activities and remain on-call throughout construction/decommissioning in the event a special-status species wanders into the project site.

Preconstruction surveys for special-status species shall be conducted within the project boundaries by the Lead Biologist or approved biological monitor within 14 days of the start of any vegetation clearing or grading activities. Methodology for preconstruction surveys shall be appropriate for each potentially occurring species-status species and shall follow U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife preconstruction survey guidelines where appropriate. Surveys need not be conducted for

all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days of the portion of the project site being disturbed. The Lead Biologist may use a variety of approaches (including but not limited to monitoring, track plates, and direct observation) and evidence (including burrow characteristics and presence of sign such as scat and tracks) to determine burrow activity. 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.

If desert tortoises are found onsite during subsequent surveys or biological monitoring activities, construction activities shall cease to avoid the potential for take and consultation with U.S. Fish and Wildlife Service and California Department of Fish and Wildlife shall be initiated to obtain the necessary incidental take permit authorizations or provide evidence such a permit is not required.

Preconstruction surveys shall be conducted by a qualified biologist for the presence of American badger or desert kit fox dens within 14 days prior to commencement of construction activities. The surveys shall be conducted in the project site for American badger and desert kit fox. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days prior to that portion of the project site disturbed. If potential dens are observed and avoidance is feasible, the following buffer distances shall be established prior to construction activities:

a. Desert kit fox or American badger potential den: 50 feet.

b. Desert kit fox or American badger active den: 100 feet.

c. Desert kit fox or American badger natal den: 500 feet.

If avoidance of the potential dens is not possible, the following measures are required to avoid potential adverse effects to the American badger and desert kit fox:

a. If the qualified biologist determines that potential dens are inactive, the biologist shall excavate these dens by hand with a shovel to prevent American badgers or desert kit foxes from re-using them during construction.

b. If the qualified biologist determines that potential dens may be active, an onsite passive relocation program shall be implemented. This program shall consist of excluding American badgers or desert kit foxes from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for 7 days to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the qualified biologist determines that American badgers or desert kit foxes have stopped using the dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent re-use during construction.

During fencing and grading activities daily monitoring reports shall be prepared by the monitoring biologists. The Lead Biologist shall prepare a summary monitoring report documenting the effectiveness and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall activities conducted related to biological resources, including the Environmental Awareness Training and Education Program, clearance/pre-activity surveys, monitoring activities, and any observed special-

status species, including injuries and fatalities. These monitoring reports shall be submitted to the Kern County Planning and Community Development Department and relevant resource agencies, as applicable, on a monthly basis along with copies of all survey reports.

MM 4.4-5: Preconstruction Special-Status Plant Surveys. Within 14 days prior to the commencement of any ground-disturbing activities, the project operator shall conduct preconstruction surveys for special-status and protected plant species within the project area, including but not limited to Joshua trees, cholla, beavertail cactus, alkali mariposa lily, Clokey's cryptantha, Rosamond eriastrum, sagebrush loeflingia, spreading navarretia, Latimer's woodland-gilia, salt spring checkerbloom, short-joint beavertail, and recurved larkspur. After the preconstruction survey determines the exact location of these species, if present, on the project site and the number of individuals or populations present, the project proponent/operator shall submit written documentation to the Kern County Planning and Natural Resources Department confirming implementation of the measures described below.

a. The project proponent/operator shall work with a qualified biologist to determine presence of Clokey's cryptantha, Rosamond eriastrum, sagebrush loeflingia, spreading navarretia, Latimer's woodland-gilia, salt spring checkerbloom, short-joint beavertail, and recurved larkspur and identify all known locations of alkali mariposa lily to establish "avoidance areas". All special-status plants found within the project site shall be avoided by a buffer of 25 feet. 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.

b. The project proponent/operate shall pay the required fee to remove Joshua trees, cholla, and beavertail cactus in accordance with the California Desert Native Plant Act prior to construction activities.

c. All alkali mariposa lilies that cannot feasibly be avoided in final project design shall have bulbs collected prior to construction. Additional, a transplantation plan for alkali mariposa lily will be submitted and approved by the County prior to ground disturbance and bulb collection. The plan will include the following:

    i. Identify an area of occupied habitat to be preserved and removed;

    ii. Identify areas of onsite or offsite preservation, restoration, or enhancement locations;

    iii. Methods for preservation, restoration, enhancement, and/or translocation

    iv. Indicate a replacement ratio and success standard of 1:1 for impacted to individuals

    v. Establish a monitoring program to ensure mitigation success

    vi. Create an adaptive management and remedial measures in the event that performance standards are not achieved

vii. Ensure financial assurances and a mechanism for conservation of any mitigation lands required in perpetuity.

d. Any Clokey's cryptantha, Rosamond eriastrum, sagebrush loeflingia, Latimer's woodland-gilia, salt spring checkerbloom, short-joint beavertail, and recurved larkspur onsite individuals or 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, prior to ground disturbance of these areas.

e. If any spreading navarretia individuals or populations are found onsite and cannot feasibly be avoided in final project design, consultation with the U.S. Fish and Wildlife Service will be required prior to ground disturbing activities.

f. Temporary ground disturbance associated with the gen-tie lines or collector lines shall be recontoured to natural grade (if the grade was modified during the temporary disturbance activity), and revegetated with an application of a native seed mix prior to or during seasonal rains to promote passive restoration of the area to pre-project conditions. However, if invasive plant species were present, these species would not be restored. An area subjected to temporary ground disturbance means any area that is disturbed but will not be subjected to further disturbance as part of the project. This does not include areas already designated as urban/developed. Prior to seeding temporary ground disturbance areas, the qualified biologist will review the seeding palette to ensure that no seeding of invasive plant species, as identified in the most recent version of the California Invasive Plant Inventory for the region, will occur.

g. The project operator shall correspond with the County to determine what is needed for project compliance with the Willow Springs Specific Plan.

MM 4.4-6: **Preconstruction Desert Tortoise Surveys.** Within 14 days prior to the commencement of any ground-disturbing activities, the project operator shall conduct preconstruction surveys for desert tortoise within the project area. The surveys shall be conducted in accordance with U.S. Fish and Wildlife Service (USFWS) protocol (2011). If no burrows or tortoises are discovered during preconstruction surveys, no further mitigation is necessary. The desert tortoise is a federally and state threatened species and, consequently, impacts that would cause "take" of the species would require the issuance of Incidental Take Permits from both USFWS and the California Department of Fish and Wildlife (CDFW) to comply with the federal Endangered Species Act and California Endangered Species Act. If burrows or tortoises are identified on the project site during preconstruction surveys, the project operator shall be required to consult with USFWS and CDFW regarding take coverage, and adhere to the following minimum conditions:

a. Develop a plan for desert tortoise translocation and monitoring prior to project construction. The plan shall provide the framework for implementing the following measures:

i. If, upon consultation with USFWS and CDFW, it is determined by both resource agencies that a permanent tortoise proof exclusion fence is required, a fence shall be installed around all construction and operation areas prior to the initiation of

earth disturbing activities, in coordination with a qualified biologist. The fence shall be designed in such a manner to allow other wildlife to access through the permanent security fence and be constructed of 0.5-inch mesh hardware cloth and extend 18 inches above ground and 12 inches below ground. Where burial of the fence is not possible, the lower 12 inches shall be folded outward against the ground and fastened to the ground so as to prevent desert tortoise entry. The fence shall be supported sufficiently to maintain its integrity, be checked at least monthly during construction and operations, and maintained when necessary by the project operator to ensure its integrity. Provisions shall be made for closing off the fence at the point of vehicle entry. Common raven perching deterrents shall be installed as part of the fence construction.

ii. An Authorized Biologist shall conduct a preconstruction survey for desert tortoise within the construction site, as well as before and after installation of desert tortoise exclusionary fencing (if required to be installed) and project security fencing. An Authorized Biologist has the appropriate education and experience to accomplish biological monitoring and mitigation tasks and is approved by CDFW and USFWS. Two surveys without finding any desert tortoises or new desert tortoise sign shall occur prior to declaring the site clear of desert tortoises.

iii. All burrows that could provide shelter for a desert tortoise shall be hand-excavated prior to ground-disturbing activities.

iv. An Authorized Biologist shall remain onsite until all vegetation necessary for the construction of the project is cleared and, at a minimum, conduct site and fence inspections on a monthly basis throughout construction in order to ensure project compliance with mitigation measures.

v. An Authorized Biologist shall remain on-call throughout fencing and grading activities in the event a desert tortoise wanders onto the project site.

vi. Mitigation for permanent loss of occupied desert tortoise habitat shall be mitigated at a 1:1 ratio to reduce potential effects to less-than-significant levels. Mitigation can be achieved through purchase of credit from an existing mitigation bank, such as the Desert Tortoise Natural Area, private purchase of mitigation lands, or onsite preservation, as approved by the resource agencies.

b. A Raven Management Plan shall be developed for the project site. This plan shall include at a minimum:

i. Identification of all common raven nests within the project area during construction.

ii. Weekly inspections during construction under all nests in the project area for evidence of desert tortoise predation (e.g., scutes, shells, etc.). If evidence of desert tortoise predation is noted, a report shall be submitted to USFWS, CDFW, and Kern County Planning and Community Development Department within five calendar days; and

iii. Provisions for the management of trash that could attract common ravens during the construction, operations and maintenance, and decommissioning phases of the proposed project.

MM 4.4-7: **Preconstruction Burrowing Owl Surveys.** A qualified wildlife biologist (i.e., a wildlife biologist with previous burrowing owl survey experience) shall conduct preconstruction surveys of the permanent and temporary impact areas to locate active breeding or wintering burrowing owl burrows no fewer than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading, tilling). The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls. Surveys may be conducted concurrently with desert tortoise preconstruction surveys. As each burrow is investigated, surveying biologists shall also look for signs of American badger and desert kit fox. Copies of the survey results shall be submitted to CDFW and the Kern County Planning and Community Development Department.

If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted within a buffer of no fewer than 100 meters (330 feet) from an active burrow during the breeding season (i.e., February 1 to August 31), unless otherwise authorized by CDFW. During the non-breeding (winter) season (i.e., September 1 to January 31), ground-disturbing work can proceed as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.

If burrow avoidance is infeasible during the non-breeding season or during the breeding season (February 1 through August 31) where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with Appendix E1 (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation.

If passive relocation is required, a qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and a Mitigation Land Management Plan in, accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation, for review by CDFW prior to passive relocation activities. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation. At a minimum, the following recommendations shall be implemented:

a. Temporarily disturbed habitat shall be restored, if feasible, to pre-project conditions including decompacting soil and revegetating.

b. Permanent impacts to nesting, occupied and satellite burrows and/or burrowing owl habitat shall be mitigated such that the habitat acreage, number of burrows and burrowing owl impacted are replaced based on a site-specific analysis and shall include permanent conservation of similar vegetation communities (grassland, scrublands, desert, urban, and agriculture) to provide for burrowing owl nesting, foraging,

wintering, and dispersal (i.e., during breeding and non-breeding seasons) comparable to or better than that of the impact area, and with sufficiently large acreage, and presence of fossorial mammals.

c. Permanently protect mitigation land through a conservation easement, deed restriction, or similar mechanism 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 operator may purchase available burrowing owl conservation bank credits. Land identified to mitigate for passive relocation of burrowing owl may be combined with other offsite mitigation requirements of the proposed project if the compensatory habitat is deemed suitable to support the species.

MM 4.4-8: **Nesting Birds and Raptors.** If construction is scheduled to commence during the non-nesting season (i.e., September 1 to January 31), no preconstruction surveys or additional measures are required. To avoid impacts to nesting birds in the project area, a qualified wildlife biologist shall conduct preconstruction surveys of all potential nesting habitat within the project site for construction activities that are initiated during the breeding season (i.e., February 1 to August 31). The raptor survey shall focus on potential nest sites (e.g., cliffs, large trees, windrows) within a 0.5-mile buffer around the project site. Swainson's hawk nest survey shall focus on potential nest sites (e.g., cliffs, large trees, windrows) within a 5-mile buffer around the project site and follow the 2010 Swainson's hawk protocol surveys (CEC and CDFG 2010). Surveys shall be conducted no more than 14 days prior to construction activities. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur shortly before a portion of the project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. If active nests are found, a suitable no-disturbance buffer (e.g., 200–300 feet for common raptors; 0.5 mile for Swainson's hawk; 30–50 feet for passerine species) shall be established around active nests until a qualified biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest). For non-listed species, encroachment into the avoidance buffer may occur at the discretion of a qualified biologist; however, for State-listed species, consultation with CDFW shall occur prior to encroachment into the aforementioned buffers.

MM 4.4-9. **APLIC Compliance.** The project proponent/operator shall install power lines in conformance with Avian Power Line Interaction Committee (APLIC) standards for electrocution-reducing techniques as outlined in suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006), and for collision-reducing techniques as outlined in Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), or any superseding document issued by APLIC.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, MM 4.4-1 through MM 4.4-9, 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 identified in local or regional plans, policies, or regulations or by CDFW or USFWS.

There are no sensitive natural communities or riparian habitat on the project site. Therefore, no impacts to sensitive natural communities or riparian habitat would result from the implementation of the proposed project. Mitigation Measure MM 4.10-2 requires the applicant to devise and submit a site-specific SWPPP to minimize the discharge of wastewater during construction. The SWPPP would include steps for implementation of best management practices (BMPs) aimed at sediment control and erosion control, and could include soil stabilization, silt fencing, straw bale and temporary catch basins. These BMPs would be implemented during construction of the proposed project as a condition of required permits, therefore minimizing soil erosion in jurisdictional waters to the extent feasible.

A total of five hydrologic features were identified and delineated within or adjacent to the project site. These drainages are potentially subject to RWQCB and CDFW jurisdiction. Because they drain to inland areas of California, the USACE has determined that waters of the United States do not occur on the project site (Appendix E-2 of this EIR). Approximately 5.99 acres of potential CDFW jurisdiction and 4.42 acres of potential RWQCB jurisdiction occur on the project site. 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. Impacts to jurisdictional areas have the potential to be considered significant if they are not mitigated. To avoid potential impacts, the project would implement Mitigation Measures MM 4.4-10 and MM 4.4-11, which would identify all ephemeral drainages and how they would be avoided or develop compensatory mitigation if avoidance is not feasible. With implementation of these mitigation measure, impacts would be considered less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.10-2.

MM 4.4-10: Prior to issuance of any grading or building permit, the project proponent/operator shall submit a final Jurisdictional Delineation report. A copy of this report shall also be provided to the Lahontan Regional Water Quality Control Board, CDFW, and the County. The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:

a. Delineation of all jurisdictional features at the project site. Potential jurisdictional features (ephemeral drainages) within the project boundary identified in the jurisdictional delineation report that are not anticipated to be directly impacted by project related activities shall be avoided. This may be shown in plan form.

b. Any material/spoils generated from project activities shall be located away from jurisdictional areas or special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.

c. Materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from the top of bank.

d. Any spillage of material will be stopped if it can be done safely. The contaminated area will be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative will be notified.

MM 4.4-11: Prior to ground disturbance activities that would impact aquatic features, the project proponent/operator shall be subject to provisions as identified below:

a. 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. Copies of reports shall be submitted to the County.

b. Based on consultation with RWQCB and CDFW, if permits are required for the project site, appropriate permits shall be obtained prior to disturbance of jurisdictional resources.

c. Compensatory mitigation for impacts to unvegetated streambeds/washes shall be identified prior to disturbance of the features at a minimum 1:1 ratio, as approved by the RWQCB or CDFW either through onsite or offsite mitigation, or purchasing credits from an approved mitigation bank.

d. The project proponent/operator shall comply with the compensatory mitigation required and proof of compliance, along with copies of permits obtained from RWQCB and/or CDFW, which shall be provided to the County.

e. A Habitat Mitigation and Monitoring Plan (HMMP) shall be prepared that outlines the compensatory mitigation in coordination with the RWQCB and CDFW.

   i. If onsite mitigation is proposed, the HMMP shall identify those portions of the site, such as relocated drainage routes, that contain suitable characteristics (e.g., hydrology) for restoration. Determination of mitigation adequacy shall be based on comparison of the restored habitat with similar, undisturbed habitat in the site vicinity (such as upstream or downstream of the site).

   ii. The HMMP shall include remedial measures in the event that performance criteria are not met.

   iii. If mitigation is implemented offsite, mitigation lands shall be comprised of similar or higher quality and preferably located in Kern County. Offsite land shall be preserved through a deed restriction or conservation easement and the HMMP shall identify an approach for funding assurance for the long-term management of the conserved land. Alternatively, the applicant may purchase credits from an approved mitigation bank.

   iv. Copies of any coordination, permits, etc., with RWQCB and CDFW shall be provided to the County.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-10, MM 4.4-11, and MM 4.10-2, 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.

Isolated waters within the South Lahontan Hydrologic Region, including those on the project site, are not considered "waters of the United States" and, therefore, are not be subject to regulation under the federal CWA as determined by the USACE (Appendix E-2 of this EIR). In addition, no areas were identified on the project site that exhibit characteristics of wetlands as defined by USACE. Therefore, the project would have no impact on federally protected wetlands.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.4-4: The project would interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

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.

Project development, fencing, and activities associated with construction and operations have the potential to interfere with local movement of wildlife within and adjacent to the project site; however, 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. The project site contains areas of relatively undisturbed desert vegetation that are used by species on a smaller scale; however, these habitats are fragmented by roads, fences, rural residences, agricultural fields, and solar energy developments which likely limits the project site as a significant corridor for local wildlife movement. Therefore, implementation of the project would not significantly impact local or regional wildlife movement. Lighting from the project site could potentially affect local movement of nocturnal wildlife by deterring them from illuminated areas around the project site. However, 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 discussed in Mitigation Measures MM 4.1-5 through 4.1-7. This would reduce the temporary impacts to wildlife movement through the area. Therefore, with implementation of Mitigation Measure MM 4.1-5 through 4.1-7, the proposed project would not adversely impact wildlife movement and impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.1-5 through MM 4.1-7.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.1-5 through MM 4.1-7, impacts would be less than significant.

Impact 4.4-5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

As currently designed, the proposed project is considered consistent with the Land Use, Open Space, and Conservation Element of the Kern County General Plan. The project would implement mitigation measures to reduce potential project-related impacts to sensitive biological resources including special-status species and jurisdictional features. While the California Desert Native Plants Act is a State statute, Kern County administers the permit program for removal of the species covered in the act. The applicant would pay the required fee to remove cholla, beavertail cactus, and Joshua trees as stated in Mitigation Measure MM 4.4-5. Additional, temporary ground disturbance would be reseeded as stated in Mitigation Measure MM 4.4-5. With the implementation of this mitigation measure, impacts to any local policies or ordinances would be less than significant.

One local plan (Willow Springs Specific Plan) falls within the project site. This plan requires avoidance of Joshua trees when possible and to create a Preservation and Transplantation Plan. Direct impacts to Joshua trees could occur due to project activities such as Joshua tree removal and root damage due to construction activities. Indirect impacts include dust and soil compaction leading to habitat degradation. However, removal of Joshua trees would be mitigated and temporary ground disturbance would be addressed as stated in Mitigation Measure MM 4.4-5 and MM 4.4-11. Therefore, these impacts would be mitigated to a level of less than significant through the implementation of Mitigation Measures MM 4.4-5 and MM 4.4-12.

Mitigation Measures

Implement of Mitigation Measure MM 4.4-5.

MM 4.4-12: Prior to the issuance of a grading permit, the project proponent/operator shall develop a Joshua Tree Preservation Plan. The Plan shall be prepared by a qualified biologist pre-approved by Kern County and shall be approved by the appropriate agencies, including Kern County, prior to implementation. At a minimum, the plan shall identify the methods utilized, as applicable, that the project is taking to comply with any CDFW CESA take requirements and compensatory mitigation related to the protection or mitigation of impacted Joshua Trees and documentation of any such CDFW take authorization and mitigation shall be provided to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.4-5 and MM 4.4-12, impacts would be less than significant.

Impact 4.4-6: The project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

The project would not conflict with any other adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan. No impact would occur.

Mitigation Measures

No mitigation would be required.

Level of Significance after Mitigation

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts for a project would be significant if the incremental effects of the individual project are considerable when combined with the effects of past projects, other current projects, and probable future projects. As described above, the project-specific impacts of the project would be less than significant with implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, MM 4.4-1 through MM 4.4-12, MM 4.9-2, and MM 4.10-2.

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 3-4**, *Cumulative Projects List*, in Chapter 3, *Project Description*, of this EIR, other projects with similar species effects have been completed within the Antelope Valley including Antelope Valley Solar Project and North Rosamond Solar Project, and Willow Springs Solar Project, which abut the project site, and Catalina Renewable Energy Project and, Rosamond Solar Project, Valentine Solar Project, and Antelope Valley Solar Project which are all within 6 miles of the project site. 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.

As described above, there are a number of special-status species, both plants and wildlife, that currently utilize the project site and surrounding vicinity. Implementation of the project, along with related projects, have the potential to impact transient wildlife species, including burrowing owls, Swainson's hawk, loggerhead shrike, LeConte's thrasher, northern harrier, mountain plover, other raptors, migratory birds, American badger, and desert kit fox. The project site contains habitat that support plants, insects, rodents, and small birds that provide a prey base for raptors and terrestrial wildlife. In addition, based on the literature review and database search completed for the project, the region is known to support a diversity of special-status species, most of which are not expected to utilize the project site on a transient basis, if at all.

The project would contribute to cumulative impacts to special-status plant species, including the alkali mariposa lily, a CRPR 1B.2 species; however, after implementation of MM 4.4-5, which includes pre-

construction surveys, avoidance, and translocation/salvage measures, the project's contribution of impacts to special-status plant species would be less than significant.

Given the number of present and reasonably foreseeable future development projects in the Antelope Valley, the proposed project, when combined with other projects, would contribute to cumulative loss of habitat for special-status species. Implementation of Mitigation Measures would reduce impacts to habitat to less than significant for the proposed project. However, the proposed project, when combined with other related development projects proposed throughout the County, would cumulatively impact habitat for special-status species. Thus, cumulative impacts would be significant and unavoidable.

In addition, common raven numbers have grown substantially in the past few decades in the western Mojave Desert. Ravens are predators of the 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 project with mitigation incorporated, would not be cumulatively considerable because project impacts to specials-status wildlife would be reduced.

When considered in combination with other existing and reasonably foreseeable projects in the surrounding flat, open portions of Antelope Valley from SR-14 to the Tehachapi foothills, the proposed project has the potential to further reduce local wildlife movement. However, wildlife movement within the project site and area is likely diffuse, and flat, undeveloped lands would remain available to facilitate wildlife movement within the valley. Therefore, impacts concerning wildlife movement would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.1-5 through MM 4.1-7, MM 4.4-1 through MM 4.4-12, MM 4.9-2, and MM 4.10-2.

Level of Significance after Mitigation

Despite implementation of the above mitigation, cumulative impacts would be significant and unavoidable to transient wildlife species, including burrowing owls, Swainson's hawk, loggerhead shrike, LeConte's thrasher, northern harrier, mountain plover, other raptors, migratory birds, American badger, and desert kit fox.

Section 4.5
Cultural Resources

4.5.1 Introduction

This section of the EIR provides contextual background information on cultural resources in the project site, including the site's prehistoric, ethnographic, and historical settings of the region. This section also summarizes the results of a cultural resources assessment, including background research, cultural resources survey of the project site, and significance evaluation of identified resources. The project's potential impacts on tribal cultural resources, are addressed in Section 4.16, *Tribal Cultural Resources*.

This section is based on two cultural resources technical reports prepared by ASM Affiliates (ASM) and Native American consultation conducted by the County for purposes of compliance with CEQA requirements prompted by Assembly Bill (AB) 52 and Senate Bill (SB) 18. The *Phase I Cultural Resources Survey* report (ASM, 2020a), details the results of a cultural resources records search and field survey for the project, and the *Phase II Test Excavation and Determinations of Significance* report (ASM, 2020b), presents the results of testing and significance evaluation at sites within the Chaparral Solar facility. These reports are provided in Appendix F of this EIR. These studies were conducted in compliance with California Public Resources Code (PRC) Section 5024.1 and CEQA to identify archaeological, historic built architectural, and other cultural resources in the project area. Due to the confidential nature of the location of cultural resources, information regarding locations of cultural resources has been removed from these reports and is not included in the appendix.

Cultural Resource Terminology

For the purposes of CEQA, "cultural resources" generally refer to prehistoric and historical archaeological sites, isolates, and the built environment. Cultural resources can also include areas determined to be important to Native Americans. Below are definitions of key cultural resources terms used in this section.

- **Alluvium:** a fine-grained fertile soil consisting of mud, silt, and sand deposited by flowing water on flood plains, in river beds, and in estuaries.
- **Archaeological site:** A site is defined as the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these remains. Archaeological remains usually take the form of artifacts (e.g., fragments of tools, vestiges of utilitarian, or nonutilitarian objects), features (e.g., remnants of walls, cooking hearths, or midden deposits), and ecological evidence (e.g., pollen remaining from plants that were in the area when the activities occurred). Prehistoric archaeological sites generally represent the material remains of Native American groups and their activities dating to the period before European contact. In some cases, prehistoric sites may contain evidence of trade contact with Europeans. Ethnohistoric archaeological sites are defined as Native American settlements occupied after the arrival of European settlers in California. Historic archaeological sites reflect activities during the Historic period.
- **Artifact:** An object that has been made, modified, or used by a human being.
- **Cultural resource:** Cultural resources are expressions of human culture and history in the physical environment, and may include archaeological sites, buildings, structures, objects, districts, works of art, architecture, and natural features that were important in past human events. They may consist

of physical remains, but also may include areas where significant human events occurred, even though evidence of the events no longer remains. Cultural resources also include places that are considered to be of traditional cultural or religious importance to social or cultural groups.

- **Ethnographic:** Relating to the study of human cultures. "Ethnographic resources" represent the heritage resource of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.
- **Historic period:** The period that begins with the arrival of the first nonnative population and thus varies by area. In 1772, Commander Don Pedro Fages was the first European to enter Kern County, initiating the historic period in the project study area.
- **Historical resource:** This term is used for the purposes of CEQA and is defined in the CEQA *Guidelines* (Section 15064.5) as: (1) a resource listed in, or determined to be eligible for listing in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.
- **Holocene:** Of, denoting, or formed in the second and most recent epoch of the Quaternary period, which began 10,000 years ago at the end of the Pleistocene.
- **Isolate:** An isolated artifact or small group of artifacts that appear to reflect a single event or activity. Because isolates may lack identifiable context, and may not have the potential to add important information about a region, culture, or person, they are generally not considered under CEQA to be historical or unique archaeological resources (PRC Section 21083.2 and CEQA *Guidelines* Section 15064.5).
- **Lithic:** Of or pertaining to stone. Specifically, in archaeology lithic artifacts are chipped or flaked stone tools, and the stone debris resulting from their manufacture.
- **Pleistocene (Ice Age):** An epoch in the Quaternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth's land.
- **Prehistoric period:** The era prior to 1772. The later part of the prehistoric period is also referred to as the protohistoric period in some areas, which marks a transitional period during which native populations began to be influenced by European presence resulting in gradual changes to their lifeways.
- **Quaternary age:** The most recent of the three periods of the Cenozoic Era in the geologic time scale of the ICS. It follows the Tertiary Period, spanning 2.588 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: The Pleistocene and the Holocene Epochs.
- **Stratigraphy:** The natural and cultural layers of soil that make up an archaeological deposit, and the order in which they were deposited relative to other layers.
- **Tribal cultural resource:** These are defined in 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.

4.5.2 Environmental Setting

The project site generally lies within the western Mojave Desert, specifically the Antelope Valley, approximately 5.5 miles west of the unincorporated community of Rosamond. The Antelope Valley is within the Mojave Desert geomorphic province (CGS, 2002). The Mojave Desert province is characterized primarily by a broad interior region of isolated mountain ranges separated by expanses of desert plains. The Mojave Desert province is wedged between the Garlock Fault and the San Andreas Fault, which have uplifted the surrounding mountains relatively rapidly, isolating the Mojave Desert from the Pacific Coast and creating the interior drainage basins of the western Mojave Desert, such as the Antelope Valley. The west end of the Antelope Valley is defined by the Tehachapi and San Gabriel Mountains, forming the v-shaped basin of the western Mojave Desert.

The Antelope Valley floor is mantled in thick deposits of Quaternary alluvial and lacustral (lakebed) sediments that have filled the West Antelope, East Antelope and Kramer structural basins. The alluvial sediments are subdivided into two units: older (Pleistocene) Quaternary sediments, and younger (Holocene) alluvial surface deposits. These alluvial sediments are derived from nearby granitic mountains and have been deposited on the valley floor over the course of thousands of years.

In the vicinity of the project site, a layer of unknown thickness of younger Quaternary alluvial sediments overlies the thicker older Quaternary sediments. The younger Quaternary valley alluvial deposits, composed of weathered soil material and poorly sorted clay, silt, and sand, may be up to several hundred feet thick in valley areas, and thinner on slopes at the valley margins.

Paleoenvironment

As glaciers in the western U.S. 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 (ASM, 2020a). During the late Pleistocene age, fossil evidence suggests that the Antelope Valley was inhabited by numerous large mammalian species including sloths, horses, bears, mammoth, bison, camels, as well as prong-horned antelope. Large carnivorous species included saber-toothed cats, wolves, mountain lions, desert coyotes and foxes, while smaller animals included rodents, rabbits, squirrels and a multitude of birds. Studies of pollen and pack rat middens suggest that desert vegetation began replacing the low-elevation woodlands between 12,000 and 8,000 years ago. Evidence suggests that the plant and animal communities that exist within the Antelope Valley today did not become established until after 4,300 years ago (Price et al., 2008).

Prehistoric Setting

The prehistory of the Mojave Desert is generally described in terms of cultural "complexes." A complex is a specific archaeological manifestation of a general mode of life, characterized by technology, artifact types, economic systems, trade, burial practices, and other aspects of culture. Complexes are typically associated with particular chronological periods. The prehistory of the Mojave is generally divided into the following time-periods/complexes: Paleo-Indian, Lake Mojave Complex, Pinto Complex, Gypsum Complex, Rose Springs Complex, and Late Prehistoric.

Paleo-Indian (10,000-8000 B.C.)

The Paleo-Indian period is represented in the Mojave primarily by large, fluted Clovis projectile points. This limited evidence suggests that early human occupants of the Mojave probably lived in small, mobile groups in temporary camps in the vicinity of permanent water sources (ASM, 2020a). In the vicinity of the project site, a fragment of a fluted Clovis point was recorded on the southern slopes of the Tehachapi Mountains, and recent excavations at Rosamond Lake in the Antelope Valley to the south have documented a terminal Pleistocene/Early Holocene occupation. In addition, the earliest occupation of CA-KER-2821/H, also known as the Bean Springs complex, an extensive archaeological site near Willow Springs, has been radiocarbon dated to 9020-9430 RCYBP (radiocarbon years before present) (ASM, 2020a).

Lake Mojave Complex (8000-6000 B.C.)

In terms of material culture, the Lake Mojave Complex is typified by stone tools such as Lake Mojave and Silver Lake projectile points, bifaces, steep-edged unifaces, crescents, and some ground stone implements (ASM, 2020a). Lake Mojave groups were organized in relatively small, mobile groups and practiced a forager-like subsistence strategy. Some trade with coastal groups was practiced, as evidenced by the presence of shell beads. Lake Mojave sites have been found primarily around Fort Irwin, Lake Mojave, China Lake, Rosamond Lake, and Twentynine Palms.

The Pinto Complex (6000 to 3000 B.C.)

Archaeological deposits dating from the Pinto Complex suggest that Pinto settlement patterns consisted of seasonal occupation by small, semi-sedentary groups that were dependent upon a combination of big and small-game hunting and collection strategies, which could include the exploitation of stream or water resources. Typically, sites of this period, which are far more geographically widespread than the Lake Mojave complex sites, are found along lakeshores and streams or springs, some of which are now dry. Material culture representative of this period in California prehistory include roughly formed projectile points, "heavy-keeled" scrapers, choppers, and a greater prevalence of flat millingstones and manos, indicating a more intensive use and processing of plant resources (ASM, 2020a). 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 (ASM, 2020a). A number of Pinto sites have been recorded in the Antelope Valley, including at least six at Edwards Air Force Base (Price et al., 2008).

Gypsum Complex (c. 2000 B.C. to A.D. 200)

Many archaeological sites of this period are small and surficial, probably of a temporary nature. It is during this time, however, that more archaeological evidence suggestive of inter-tribal trade appears, particularly between the desert and the coast. A site at Lovejoy Springs (CA-LAN-192), which has a prominent Gypsum component, a group inhumation with at least nine individuals was uncovered, including a child buried with more than 3,000 *Olivella* shell beads from the Southern Californian coast (Price et al., 2008). The artifact assemblage associated with this period also includes an increased number of millingstones and manos, and it is believed that it was during this period that the pestle and mortar were introduced. These technological developments may point to the increased consumption of seeds and mesquite. Other artifacts associated with the Gypsum Period include Humboldt Concave Base, Gypsum Cave, Elko Eared, and Elko Corner-notched projectile points (Warren, 1984).

Rose Springs Complex (c. A.D. 200 to 1200)

The general cultural pattern for this period is a continuation of that of the preceding Gypsum Period. Rose Springs archaeological sites are more numerous than sites dating to previous periods and contain more well-developed middens, indicating an increase in population and a more permanent settlement pattern (ASM, 2020a). In addition, the archaeological record attests to established trade routes between desert and coastal populations by way of shell beads and steatite, as well as an introduction of Anasazi influence from the eastern Great Plains as evidenced by the appearance of turquoise and pottery. Material culture related to this complex includes obsidian artifacts, Rose Spring and Eastgate projectile points, millingstones, manos, mortars and pestles, slate pendants, and incised stones (Warren, 1984). These projectile points, which are smaller than those in preceding periods, are thought to reflect the adoption of the bow and arrow.

The prevalent use of obsidian is a defining feature of the Rose Springs period. Obsidian from the Coso volcanic field, 70 miles north of Mojave, was imported in near-finished form for use in making lithic tools (Price et al., 2008). The importing of obsidian seems to have dropped sharply at the end of the Rose Springs period, possibly associated with the Medieval Climatic Anomaly, a period of climate change between A.D. 800 and 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 to 1100 and A.D. 1200 to 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 (ASM, 2020a). A number of sites have been identified along the shores of Koehn Lake, including one site that retains evidence of a pit-house (ASM, 2020a).

The Late Prehistoric Period (A.D. 1200 to European Contact)

Following periods of drought during the Rose Springs Period, wetter conditions returned between A.D. 1350 and 1600, associated with a climatic event known as the Little Ice Age.

By the Late Prehistoric Period, an extensive network of established trade routes wound their way through the desert, routing goods to populations throughout the Mojave region. Near the project site, trade routes

have been postulated as running along the foothills on the southern border of the Antelope Valley and along the Mojave River (Sutton, 1988). The Antelope Valley sat at a convenient geographical location for controlling trade, between the Great Basin and the southern coastal region (Sutton, 1988).

It is also believed that these trade routes encouraged or were the motivating factors for the development of an "increasingly complex socioeconomic and sociopolitical organization" among Protohistoric peoples in Southern California. Housepit village sites are prevalent during this period, as are the presence of Desert Side-notched and Cottonwood projectile points, brownware and buffware ceramics, steatite shaft straighteners, painted millingstones, and, to a lesser degree, coastal shell beads. Beginning around A.D. 1300, however, a decline in trade occurred and well-established village sites were abandoned (Warren, 1984).

Ethnographic Setting

At the time of European contact, numerous groups occupied the area in and surrounding the Antelope Valley. The southeastern portion of the valley, around the Mojave River, was inhabited by the Serrano and Vanyume. The territory of the Tataviam centered on the southwestern extent of the Antelope Valley, the Santa Clara River drainage, and possibly the Sierra Pelonas and the Palmdale area (Sutton, 1988). The Kitanemuk inhabited the southern Tehachapi Mountains and the northern and central portion of the Antelope Valley. To the north, the Kawaiisu occupied the southern Sierra Nevada and the northern Tehachapi Mountains, and may have also inhabited part of the western Mojave Desert (Sutton, 1988). Finally, during the historic period, there is some evidence for the occupation of the Western Mojave by the Chemehuevi.

In general terms, major historical or ethno-historic villages in the region were located at well-watered spots, such as springs. Most of these, for this reason, are located in the San Andreas Rift Zone, along the south side of the Antelope Valley, which is unusually well-watered. The only known ethnographic village in the general project vicinity is Willow Springs (CA-KER-129), located at the east end of the Willow Springs fault scarp, approximately one-mile northeast of the Chaparral Solar Facility. Indigenous names in Serrano (*Chibubit* or *Punakavea*), Kawaiisu (*SeSevjek*) and Kitanemuk (*šeševiyək*) are known for this village (ASM, 2020a). Through the County's consultation with the San Manuel Band of Mission Indians (San Manuel), San Manuel indicated that *Chibubit* is within the project site (refer to Section 4.16, *Tribal Cultural Resources*, for a discussion of the consultation process and results).

The Kitanemuk, Kawaiisu, and Serrano are the groups that have the most well-documented association with the proposed project vicinity and are described in more detail below.

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 cultural, although complex basketry appeared to be a

defining feature (Sutton, 1988). In terms of language, the Kawaiisu were a Numic-speaking group, in contrast to their Takic-speaking neighbors to the south, the Kitanemuk.

Kitanemuk

The Kitanemuk occupied a territory that extended from the Tehachapi Mountains into the western end of the Antelope Valley. While most of their recorded villages were located in the Tehachapi Mountains, their settlement pattern is poorly understood. Some scholars posit that the Antelope Valley's desert floor was used only on a seasonal basis, while others point to archaeological evidence of permanent occupation of the desert floor during the Late Prehistoric Period (Sutton, 1988). While the Kitanemuk maintained friendly relations with their other neighbors such as the Chumash, historic evidence indicates that their relationship with the Tataviam was generally hostile (Blackburn and Bean, 1978).

Like other Takic-speaking groups, such as the Serrano, Kitanemuk society had a patrilineal organization. Families grouped together into villages, which were headed by a team of "administrative elite" composed of a chief, messengers, and shamans. Kitanemuk subsistence was similar to their neighbors the Tataviam. Primary vegetable food sources included acorns, juniper berries, seeds, and yucca buds. Small game such as antelope and deer supplemented these foods.

Serrano

The Serrano spoke a dialect of the Takic family of the Uto-Aztecan language group. Serrano ancestral territory covered a broader area also included the Vanyume, a desert division or branch of the Serrano proper. The extended territory was bordered on the west by the San Gabriel Mountains and the western extent of the Antelope Valley and on the north by the Tiefort Mountains. To the east, the extended territory extended to the Providence and Cady Mountains, and southeastward beyond Twentynine Palms.

The Serrano were hunter-gatherer-fishers who exploited local resources such as acorns, pinon nuts, yucca roots, mesquite, cacti fruits, chia seeds, deer, mountain sheep, antelope, rabbits, small rodents, and birds (primarily quail) (Bean and Smith, 1978). Organized into clans, the Serrano lived in small villages with extended families residing in circular, dome- shaped structures made of willow frames covered with tule thatching (Bean and Smith, 1978). The Serrano utilized shell, bone, feathers, wood, stone, and plant fibers in the manufacture of their material culture, including extravagant basketry, blankets, and ceremonial regalia. Despite early European and Spanish contact in 1771 and 1772, respectively, the Serrano remained relatively autonomous until the period between 1819 and 1834, when many of the western Serrano were removed and placed into missions (Bean and Smith, 1978; Warren, 1984).

Historic Context

Early Exploration

Several major trails crossed the Mojave before and at the time of Spanish contact, and continued to be used not only by the native peoples but also by Euro-American explorers. The Yuma-Needles Trail ran from south of Yuma up the western side of the Colorado River to the Needles area. The Mojave Trail ran from Needles west across the desert to the coast, following the path of the Mojave River for a portion of the route. The Cocomaricopa Trail ran west from Arizona through the Salton Sink (Coachella Valley) and then northwest to meet the Mojave Trail near San Bernardino (Greene, 1983).

The first Europeans known to have visited the Mojave were Don Pedro Fages in 1772 and Juan Bautista de Anza and Father Francisco Garcés in 1774 (Greene, 1983). In 1775, Father Garcés separated from de Anza and crossed the Mojave along the ancient Mojave Trail from Needles west to the San Gabriel Mission, travelling past Soda Lake and resting at modern-day Afton Canyon in 1776 (Earle, 2005).

The Spanish missions that dotted the California coast never spread inland to the Mojave, and the desert remained relatively unexplored and unsettled by Europeans for much of the next century. The Romero-Estudillo Expedition of 1823–24 was an attempt by the Spanish to establish a secure route between the California Coast and Tucson; however, despite two attempts, the expedition never managed to make it as far as the Colorado River (Greene, 1983).

The first recorded American visitors to the Mojave were the party of Jedediah Smith, who crossed the Mojave along the Mojave Trail in 1826. Ewing Young and Kit Carson followed his route in the 1820s and 1830s. Kit Carson, who had participated in Jedediah Smith's 1828 expedition, later was the guide for John C. Fremont in 1844. This expedition was one of the first to document the Antelope Valley in detail.

The Homestead Act

In 1862, the Homestead Act was passed, allowing settlement of public lands and requiring only residence, improvement, and cultivation of the land. Although settlement had been encouraged by the Homestead Act of 1862 and the Desert Land Act of 1877, which permitted disposal of 640-acre tracts of arid public lands at $1.25 per acre to homesteaders if they proved reclamation of the land by irrigation, the Antelope Valley did not see much growth until after the coming of the railroad. In 1876, the Southern Pacific Railroad line (now the Union Pacific Railroad) that ran south from the San Joaquin Valley was connected to the line from Los Angeles, running through the Fremont and Antelope Valleys. Stops along this line were located at Cantil, Cinco, and Mojave. In 1884, this line joined the Atchison, Topeka, & Santa Fe line that ran east through Needles (ASM, 2020a).

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 (ASM, 2020a). 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 was comprised of about 70 square miles of primarily gold and silver mines. Gold was first discovered within the district in 1894 by George Bowers, at the site of the Yellow Rover Mine on Standard Hill (ASM, 2020a). The district had its heyday in the 1930s and early 1940s, and produced more than $12 million in gold and silver in the 10-year period between 1932 and 1942 (Shumway et al., 1980). Mining continued until the onset of World War II, when Executive Order L-208 forced the closure of all gold mines, in order to shift the mining workforce to other, more essential war-related commodities. Some limited mining activity occurred after the war. Total production in the District, as of 1958, was more than $20 million in gold and silver (ASM, 2020a).

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 (ASM, 2020a). 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 (ASM, 2020a). Soledad Mountain subsequently re-opened and is currently being mined. Standard Hill, also known as Bowers Hill or Elephant Butte, is the northern-most 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 (ASM, 2020a). 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 (ASM, 2020a).

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 (ASM, 2020a).

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 (ASM, 2020a). However, the lack of reliable water prevented agriculture from becoming a major industry.

In the arid environment of the high desert, water sources were always a factor in the success of agriculture. Farms were generally located near dependable sources of water such as rivers or springs. Some farmers, however, used wells for irrigation or located their farms near dry lake beds, which periodically flooded during the wet season.

The Los Angeles Aqueduct

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. 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 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 (ASM, 2020a). 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 lost in the Mono Basin to the saline waters of Mono Lake. The second aqueduct was completed in 1970.

Existing Cultural Resources

Methods Used to Identify Known Cultural Resources

To evaluate the project's potential effects on significant cultural resources, ASM conducted a cultural resources study of the project site, including both the Chaparral and Rabbitbrush Facilities, which included archival research and a pedestrian survey (ASM, 2020a). In addition, ASM conducted a Phase II report, which documents test excavations and determinations of significance/California Register of Historical Resources (CRHR) eligibility evaluations for 10 archaeological sites within the proposed footprint of the Chaparral Solar Facility, Kern County, California (ASM, 2020b). The methodology and results of these studies are summarized below.

Records Search

A record search for the project was conducted by staff at the southern San Joaquin Valley Information Center at California State University, Bakersfield. The records search included an examination of previous cultural resources survey coverage and reports and known cultural resources within a 0.5-mile radius of the project area (ASM, 2020a). Additional sources consulted included the National Register of Historic Places (National Register), the Historic Property Data File, the listing of California Historical Landmarks, the California Register, the California Inventory of Historic Resources, and the California Points of Historical Interest (PHI).

The results of the records search indicate that 20 previous cultural resources studies have been conducted within 0.50 miles of the project site. Of these, five (KE-01010, -01181, -01355, -03546, and -03874) covered the entirety of the Chaparral Solar site. Two (KE-01010 and -01286) covered a small portion, less than 25 percent, of the Rabbitbrush Solar site. Portions of the collector line routes were also covered by previous surveys.

The records search results also indicate that 49 cultural resources have been previously recorded within the 0.50-mile records search radius. Seven of those occur within the project site, all within the Chaparral Facility site. No previously recorded sites are documented within the Rabbitbrush Facility site or along the collector line routes.

The seven previously recorded resources within Chaparral consist of four prehistoric archaeological sites, including:

- **P-15-013844 (an accumulation of fire affected rock)**
- **P-15-013846, -013847, and -013848 (all lithic scatters)**

As well as three isolated prehistoric artifacts, all of which are flakes:

- **(P-15-007340, -007341, and -007342)**

Archaeological Field Surveys

A pedestrian archaeological survey of the project site, including the three sites and unsurveyed portions of the interconnection line routes (including a 100-foot-wide corridor), was conducted in May and June 2017,

March 2018, and February 2020 (ASM, 2020a). The survey used parallel transects spaced at intervals no greater than 15 meters apart. All exposed ground surfaces were examined for evidence of archaeological materials, including: artifacts, soil discoloration that may be indicative of cultural midden, ground depressions, historic debris and trash scatters, and features indicative of the former presence of structures or buildings. Areas of dense vegetation were examined purposively and opportunistically to determine whether they contained cultural resources, with particular attention paid to rodent burrow spoils piles, cut-banks, and the cleared edges of disturbed areas. Ground visibility was generally excellent, with most areas exhibiting 80 to 85 percent visibility, but others closer to 50 to 60 percent (ASM, 2020a). Identified cultural resources were documented on California Department of Parks and Recreation (DPR) 523 site record forms and mapped with sub-meter GPS. A total of 11 archaeological sites were re-identified or newly identified and recorded during the survey of the project facilities footprint. Six of these are prehistoric and five are historic archaeological sites. Ten of the sites are within the Chaparral Solar Facility project area. The eleventh site, AVEP-RA-31 (the putative historic grave), is within the Rabbitbrush Solar Facility project area. No archaeological sites are present within the Tumbleweed Solar Facility project area (however, as described in Chapter 3, *Project Description*, of this EIR, the Tumbleweed Solar Facility has been removed from the project). The archaeological sites and isolates are summarized below.

Archaeological Excavation and Evaluation

A total of 11 archaeological sites were evaluated for listing in the California Register of Historical Resources (California Register). These include one site within the Rabbitbrush Solar site and 10 sites within the Chaparral Solar site.

The resource within the Rabbitbrush Solar site was evaluated in the Phase I report (ASM, 2020a). The resource (AVEP-RA-31) consists of a historic-period refuse scatter near the putative location of a Euro-American grave (as identified on historic maps). The site consists of an uncapped well pipe, two shallow pits, early to mid-20th century domestic and construction debris, including cans, glass, porcelain, cast iron pot fragments, barbed wire, and milled wood, and modern refuse. It is thought to represent a brief campsite or a failed attempt to establish a home site. Given a lack of association with important figures and the disturbed nature of the resource, it was determined to be ineligible for listing in the California Register (ASM, 2020a). Ground penetrating radar survey and test excavation of anomalies were used to determine whether the reported grave was present. No evidence of the grave was found, but the Phase I report recommends monitoring within 100 feet of the recorded location of the grave (ASM, 2020a).

The 10 resources within the Chaparral Solar site were subject to either detailed surface documentation or subsurface testing (consisting of shovel probes and 1-by-1-meter excavation units) for purposes of evaluation for listing in the California Register (ASM, 2020b). The resources include six prehistoric archaeological sites and four historic-period sites. Four of the prehistoric archaeological sites (P-15-013844, -013846, -019553, and -019557) consist of sparse scatters of lithics or fire affected rock. Testing revealed they do not contain a subsurface component. With limited data potential, all of which was collected during the Phase II study, they are considered ineligible for listing in the California Register. The remaining two prehistoric archaeological sites (P-15-019556 and -019559) contain a variety of artifacts and materials, including flaked and ground stone and shell beads, indicative of longer term campsites. Both also contain evidence of intact subsurface deposits. Consequently, given their potential to address questions related to prehistoric technology, subsistence, and trade, both are recommended eligible for listing in the California Register (ASM, 2020b).

The historic-period archaeological sites consist of three mid-20th century refuse scatters, primarily can scatters, lacking a subsurface component or clear association with historic events (P-15-019548, -019554, and -019555), and one demolished mid-20th century farm complex, with all of the previous structures removed. Given the lack of data potential of the first three, and a lack of integrity for the farm complex, all four were recommended ineligible for the California Register (ASM, 2020b).

Cultural Resources Recorded within the Project Site

As a result of the records search and field studies, 29 cultural resources were identified within the project site, including 11 archaeological sites and 18 isolates. The resources are summarized by facility in **Table 4.5-1**, *Cultural Resources Identified within the Project Site*.

TABLE 4.5-1: CULTURAL RESOURCES IDENTIFIED WITHIN THE PROJECT SITE

Primary No. (P-15-)	Trinomial (CA-KER-)	Temporary No. (AVEP-)	Site Description	Significance
Chaparral				
013844	Unknown	None	Prehistoric site: fire affected rock	Not eligible for California Register; not a historical or unique resource under CEQA
013846	Unknown	None	Prehistoric site: sparse lithic scatter	Not eligible for California Register; not an historical or unique resource under CEQA
019548	10712H	RA-12	Historic period site: refuse scatter	Not eligible for California Register; not an historical or unique resource under CEQA
019553	10717	RA-17	Prehistoric site: sparse lithic scatter	Not eligible for California Register; not an historical or unique resource under CEQA
019554	10718H	RA-18	Historic period site: refuse scatter	Not eligible for California Register; not an historical or unique resource under CEQA
019555	10719	RA-19	Historic period site: refuse scatter	Not eligible for California Register; not an historical or unique resource under CEQA
019556	10720	RA-20	Prehistoric site: campsite with subsurface deposit	Eligible for California Register; historical resource under CEQA
019557	10721	RA-21	Prehistoric site: sparse lithic scatter	Not eligible for California Register; not an historical or unique resource under CEQA
019558	10722H	RA-22	Historic-period site: farmstead with refuse scatter and foundations	Not eligible for California Register; not an historical or unique resource under CEQA
019559	10723	RA-23	Prehistoric site: campsite with subsurface deposit	Eligible for California Register; historical resource under CEQA
007340	None	None	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA

TABLE 4.5-1: CULTURAL RESOURCES IDENTIFIED WITHIN THE PROJECT SITE

Primary No. (P-15-)	Trinomial (CA-KER-)	Temporary No. (AVEP-)	Site Description	Significance
007341	None	None	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA
007342	None	None	Prehistoric isolate: two flakes	Not eligible for California Register; not an historical or unique resource under CEQA
013847	None	None	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-8	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-10	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-11	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-12	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-13	Prehistoric isolate: two flakes	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-14	Prehistoric isolate: two flakes	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-15	Prehistoric isolate: core	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-16	Prehistoric isolate: two flakes	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-17	Prehistoric isolate: two flakes	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	REDESIGN ISO-1	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	REDESIGN ISO-2	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA

TABLE 4.5-1: CULTURAL RESOURCES IDENTIFIED WITHIN THE PROJECT SITE

Primary No. (P-15-)	Trinomial (CA-KER-)	Temporary No. (AVEP-)	Site Description	Significance
Rabbitbrush				
Unknown	Unknown	RA-31	Historic-period site: refuse scatter and possible Euro-American grave	Not eligible for California Register; not an historical or unique resource under CEQA; grave not relocated
Unknown	None	ISO-18	Historic-period isolate: glass bottle	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-19	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA
Unknown	None	ISO-20	Prehistoric isolate: flake	Not eligible for California Register; not an historical or unique resource under CEQA

SOURCE: ASM, 2020a, 2020b

Of the 11 archaeological sites, two prehistoric sites (P-15-019556 and -019559) are recommended eligible for listing in the California Register. As such, they qualify as historical resources under CEQA. The remaining nine sites are recommended as not eligible, meaning they do not qualify as historical resources under CEQA. They also are not considered to be unique archaeological resources. Isolated artifacts, by their nature, lack archaeological context and, therefore, generally do not provide sufficient information to be considered significant resources. The 18 isolates do not have the potential to yield information important to the study of prehistory or history. In fact, the information potential of the isolates was exhausted in the process of documenting the finds on DPR Primary Record forms and mapping their location. The isolates documented as part of this project are recommended not eligible for listing in the California Register, nor are they considered to be historical or unique archaeological resources under CEQA.

Potential for Unknown Buried Cultural Resources

The Antelope Valley floor is covered in thick deposits of Quaternary alluvial sediments. The alluvium is subdivided into two units: the older (Pleistocene) Quaternary sediments, and younger (Holocene) alluvial surface deposits (ASM, 2020a). These alluvial sediments are derived from nearby granitic mountains and have been deposited on the valley floor over the course of thousands of years. The younger Quaternary valley alluvial deposits, composed of weathered soil material and poorly sorted clay, silt, and sand, may be up to several hundred feet thick in valley areas, and thinner on slopes at the valley margins. The precise thickness of the younger alluvial deposits within the project area is unknown.

In many places, the interface between older land surfaces and newer alluvial depositions is marked by a well-developed buried soil profile, or paleosol. Paleosols preserve the composition and character of the earth's surface prior to subsequent sediment deposition; thus, paleosols have the potential to preserve archaeological resources if the area had been occupied or settled by humans. Holocene alluvium and Pleistocene-age surfaces buried by Holocene alluvium are the most likely landforms to contain paleosols. However, because human populations have grown since the arrival of the area's first inhabitants, younger

paleosols (late Holocene) are more likely to yield archaeological resources than older paleosols (early Holocene or Pleistocene).

A synthesis of geoarchaeological studies in the project vicinity indicate that the project site, occurring as it does in the open flats of the Antelope Valley, has a very low to moderately low potential to contain buried archaeological resources (ASM, 2020a). However, given that the portion of the Antelope Valley within which the project would be located is covered with Holocene alluvial deposits, there is a possibility that the deposition of alluvium has buried prehistoric archaeological sites that once existed on the surface. Therefore, there is a possibility that buried archaeological resources may be encountered during project-related excavation.

4.5.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Register of Historical Resources (CRHR)

Created in 1992 and implemented in 1998, the California Register is "an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Certain properties, including those listed in, or formally determined eligible for listing in, the National Register of Historic Places (NRHP) and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR (also referred to as the California Register). Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the California Register. A resource, either an individual property or a contributor to a historic district, may be listed in the California Register if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on National Register criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC Section 5024.1, Title 14 California Code of Regulations [CCR], Section 4852(c), a cultural resource must retain integrity to be considered eligible for the California Register. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-

disturbing activities, such as farming, often lack integrity because they have been directly damaged or moved from their original location, among other changes.

Typically, an archaeological site in California is recommended eligible for listing in the California Register based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions.

California Historical Landmarks

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have Statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770. CHLs #770 and above are automatically listed in the California Register.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type in the State or within a large geographic region (Northern, Central, or Southern California);
2. It is associated with an individual or group having a profound influence on the history of California; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California Points of Historical Interest

California PHI are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. PHI designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a PHI, a resource must meet at least one of the following criteria:

1. It is the first, last, only, or most significant of its type within the local geographic region (city or county);
2. It is associated with an individual or group having a profound influence on the history of the local area; or
3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. The CEQA *Guidelines* (Title 14 CCR Section 15064.5) recognize that an historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of CEQA Section 21084.1 and CEQA *Guidelines* Section 15064.5 apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of 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 CEQA Section 21083.2, a "unique" archaeological resource is an archaeological artifact, object, or site, for which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.2(b)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA *Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA *Guidelines* Section 15064.5(c)(4)).

Native American Heritage Commission

PRC Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

California Public Records Act

California Public Records Act Sections 6254(r) and 6254.10 were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public related to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency."

California Health and Safety Code Sections 7050 and 7052

Health and Safety Code Section 7050.5 declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

California Penal Code Section 622.5

California Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

Public Resources Code Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

Local

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for cultural resources applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Chapter 1. Land Use, Open Space and Conservation Element

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources that provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

Willow Springs Specific Plan

The project is subject to the provisions of the Willow Springs Specific Plan (WSSP) (Kern County, 2008), which contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Area. The policies, goals, and implementation measures for cultural resources in Kern County's Willow Springs Specific Plan are provided below.

Goal

Goal 1 To preserve cultural resources contained on sensitive sites located within the Willow Springs Specific Plan area.

Policies

Policy 1: Archaeological investigations shall be required of specific properties proposed for development. These sites are identified in the Environmental Impact Report under Cultural Resources - Literature and Records Search, page 77, and are listed as: CA-KER-2819, 2820, 2821; CA-KER-522, 1969, 2592,2593, 2599, 2595 and 2714; CA-KER-129, 273, 298, 302, 303.

Policy 2: Recorded archaeological sites shall be subjected to individual studies prior to development.

Mitigation/Implementation Measures

Measure 1: Prior to issuance of grading permits, archaeological investigations shall be required of specific properties proposed for development. This approach will eventually produce a complete record of all of the cultural resources present within the study area and should constitute a major contribution to the reconstruction of the Kitanemuk settlement pattern.

Measure 2: Prior to grading permit issuance, a recorded archaeological site found on a specific property proposed for development shall be subjected to individual study prepared at the expense of the developer by a qualified historian. Surface collection, text excavation, and laboratory analysis constitute procedures necessary to properly assess both the significance and the research potential of each individual resource.

Measure 3: Larger "village" sites, such as CA-KER-129, cemeteries, and other sites of religious significance, may be found within the study area and shall require more intensive investigation and more complete preservation.

Mitigation/Implementation Measures 1, 2, and 3 require archaeological investigations for site-specific development projects throughout the plan area. Individual studies shall be required for recorded archaeological sites and intensive investigation of larger "village" sites such as CA-KER-129, cemeteries, and other sites of religious significance. Verification of these investigations and studies shall be provided for by the developer and submitted to Kern County Department of Planning and Development Services prior to the issuance of grading permits.

4.5.4 Impacts and Mitigation Measures

Methodology

Impacts on cultural resources could result from ground-disturbing activities in conjunction with the proposed project. Ground-disturbing activities include project-related excavation, grading, trenching, vegetation clearance, the operation of heavy equipment, or other surface and sub-surface disturbance that could damage or destroy surficial or buried cultural resources including prehistoric or historic-period archaeological resources or human burials. To evaluate the project's potential effects on significant cultural

resources, ASM conducted a cultural resources study of the project site, including the Chaparral Solar Facility site and the Rabbitbrush Solar Facility site, which included archival research and a pedestrian survey (ASM, 2020a). In addition, ASM conducted a Phase II report, which documents test excavations and determinations of significance/California Register of Historical Resources (CRHR) eligibility evaluations for 10 archaeological sites within the proposed footprint of the Chaparral Solar Facility, Kern County, California (ASM, 2020b). Using these resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project would have a significant adverse effect on cultural resources if it would:

a. Cause a substantial adverse change in the significance of a historical resource, as defined in *CEQA Guidelines* Section 15064.4;

b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to *CEQA Guidelines* Section 15064.4; or

c. Disturb any human remains, including those interred outside of dedicated cemeteries.

All of the above impact thresholds are addressed in the project impacts section below. Impacts to tribal cultural resources have been addressed in Section 4.16, *Tribal Cultural Resources*, of this EIR.

Project Impacts

Impact 4.5-1: The project would cause a substantial adverse change in the significance of a historical resource, as defined in *CEQA Guidelines* Section 15064.5.

Through the records search and field survey (ASM, 2020a), 29 cultural resources were identified within the project site, including 11 archaeological sites and 18 isolates. The isolates lack archaeological context and, therefore, do not provide sufficient information to qualify as historical resources. All 11 archaeological sites were subject to further investigation, including test excavation or detailed recording. Two of the 11 resources (P-15-019556 and -019559) were determined eligible for listing in the California Register, making them historical resources under CEQA. The remaining nine resources were determined ineligible. Both P-15-019556 and P-15-019559 are prehistoric archaeological sites with subsurface components, interpreted as camp sites. If either site is impacted, this would constitute a significant impact to a historical resource. Both are located within the boundaries of the Chaparral Solar site, however, according to current design plans, both resources would not be impacted by project-related activities and would be left in place.

The project could also impact previously unknown and buried archaeological deposits that have the potential to qualify as historical resources. The project site is covered by Holocene alluvium, which has been deposited over the course of known human occupation in the region, possibly burying prehistoric archaeological sites that once existed on the surface. As such, buried archaeological sites may be encountered during project-related excavation. Although the geoarchaeological review conducted as part of the Phase I

study concluded that the area has very low to moderately low potential for buried resources (ASM, 2020a), the presence of two known prehistoric archaeological sites with subsurface cultural materials indicates that it is a possibility. In the event that unknown archaeological resources that qualify as historical resources are discovered during project construction, significant impacts could occur. Mitigation Measures MM 4.5-1 through MM 4.5-4 would require cultural resources sensitivity training for construction workers, avoidance of prehistoric archaeological sites P-15-019556 and -019559, archaeological and Native American monitoring during construction, and appropriate treatment of unearthed archaeological resources during construction. Potential impacts to P-15-019556 and -019559, as well as unknown archaeological resources that could qualify as significant historical resources, would be mitigated to less than significant through the implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4.

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 historical resources. The contact information for this Lead Archaeologist shall be provided to the Kern County Planning and Natural Resources Department prior to the commencement of any construction activities on-site. Further, the Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project:

a. Prior to commencement of any ground disturbing activities, the Lead Archaeologist, in consultation with the Native American monitor(s), shall prepare Cultural Resources Sensitivity Training materials to be used in orientation program given to 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.

b. The project proponent/operator shall ensure all new employees or onsite workers who have not participated in earlier Cultural Resources Sensitivity Trainings shall meet provisions specified above.

c. 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 penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.

d. 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 commencing work on-site.

e. During implementation of the project, the services of Native American tribal monitors, as identified through consultation with appropriate Native American tribes, working under the supervision of the Lead Archaeologist, shall be retained by the project to monitor project-related construction activities as identified in Mitigation Measures MM 4.5-2 through MM 4.5-4.

MM 4.5-2: Prior to the issuance of any grading or building permit, the project operator shall submit to the Kern County Planning and Natural Resources Department a Cultural Resources Treatment Plan. The plan shall:

a. Require that prior to conducting initial ground disturbance in the vicinity of prehistoric archaeological sites within the Chaparral Site (P-15-019556 and P-15-019559), and in coordination with the Lead Archaeologist and Native American monitor(s), exclusion areas (i.e., the recorded boundaries of the archaeological sites and all areas within 25 feet thereof) shall be temporarily marked with exclusion markers or protective fencing as determined by the Lead Archaeologist in consultation with the Native American monitor.

b. Require that the construction zone shall be narrowed or otherwise altered to avoid the exclusion areas around sites P-15-019556 and P-15-019559.

c. Provide an overview of best management practices to be utilized during construction activities to ensure protection of cultural resources.

d. Outline the process for evaluation of any unanticipated cultural discoveries during project construction activities.

MM 4.5-3: During implementation of the project, the services of both Archaeological and Native American Tribal Monitors, working under the supervision of the Lead Archaeologist as identified through consultation with appropriate Native American tribes, shall be retained by the project proponent/operator to monitor, on a full-time basis, ground-disturbing activities associated with project-related construction activities, as follows:

a. All ground-disturbing activities within 50 feet of prehistoric archaeological sites P-15-019556 and P-15-019559, within the Chaparral Site, shall be monitored by Native American Tribal Monitors and Archaeological monitors.

b. During implementation of the Chaparral Facility portion of the project, Archaeological and Native American monitoring shall be conducted for all excavation or grading activities north of the centerline of the Truman Road alignment. If no archaeological discoveries are made during the course of this monitoring, no additional monitoring will be required. 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, may adjust the level of monitoring to circumstances as warranted.

c. All ground-disturbing activities within 100 feet of the grave site associated with AVEP-RA-31, within the Rabbitbrush Site, as documented on historic maps, shall be monitored by Native American Tribal Monitors and Archaeological monitors.

d. For all other ground-disturbing activities within the project area, initial excavation or ground-disturbing activities shall be monitored by Archaeological and Native

American monitors. During the course of this initial monitoring, if the Lead Archaeologist can demonstrate that the level of monitoring should be reduced or discontinued, or if the Lead Archaeologist can demonstrate a need for continuing monitoring, the Lead Archaeologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances as warranted.

e. The Archaeological monitors and Native American monitors shall work under the supervision of the Lead Archaeologist. The Lead Archaeologist, Archaeological monitors, and Native American monitors shall be provided all project documentation related to cultural resources within the project site prior to commencement of ground disturbance activities. Should the services of any additional individuals be retained (as the Lead Archaeologist, Archaeological monitor, or Native American monitor) subsequent to commencement of ground disturbing activities, such individuals shall be provided all proposed project documentation related to cultural resources within the project area, prior to beginning work. Documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the Lead Archaeologist, Archaeological monitor, and Native American monitor.

f. 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 and to the San Manuel Band of Mission Indians. 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, the San Manuel Band of Mission Indians, and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.

MM 4.5-4: During implementation of the project, in the event archaeological materials are encountered during the course of grading or construction, the project contractor shall cease any ground disturbing activities within 50 feet of the find. The area of the discovery shall be marked off by temporary fencing that encloses a 50-foot radius from the location of discovery. Signs shall be posted that establish it as an Environmentally Sensitive Area and all entrance to the area shall be avoided until the discovery is assessed by the Lead Archaeologist, as well as the San Manuel Band of Mission Indians if the discovery involves resources of interest to Native American tribes, including but not limited to prehistoric archaeological sites or tribal cultural resources. The Lead Archaeologist in consultation with the San Manuel Band of Mission Indians, if appropriate, shall evaluate the significance of the resources and recommend appropriate treatment measures. If further treatment of the discovery is necessary, the Environmentally Sensitive Area shall remain in place until all work is completed. Per California Environmental Quality Act (CEQA) *Guidelines* Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources.

Consistent with CEQA *Guidelines* Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist in consultation with the San Manuel

Band of Mission Indians shall develop additional treatment measures in consultation with the County, which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. All resources of concern/interest to Native American tribes that cannot be avoided shall be reburied on site as close to the original find location as possible, and within an area that will not be subjected to disturbance in the future. Archaeological materials not of concern/interest to Native American tribes recovered during any investigation shall be curated at an accredited curation facility. The Lead Archaeologist, in consultation with the San Manuel Band of Mission Indians, 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, the San Manuel Band of Mission Indians, and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.

Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.5-1 through MM 4.5-4, impacts would be less than significant.

Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5.

As discussed above under Impact 4.5-1, 29 archaeological resources were identified within the project area, including 11 archaeological sites and 18 isolates. Two of the archaeological sites (P-15-019556 and -019559) are eligible for listing in the California Register and, as such, are considered historical resources under CEQA, as discussed above. The remaining 9 archaeological sites and the 18 isolates are not eligible for listing in the California Register and also are not considered unique archaeological resources. As indicated above, in the absence of mitigation, impacts to either P-15-019556 and P-15-019559 would constitute a significant impact on the environment. However, according to current design plans, both resources would not be impacted by project-related activities. As discussed under Impact 4.5-1, there also is a potential for the project to impact previously unknown, buried archaeological deposits. However, with implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4, which require cultural resources sensitivity training for construction workers, avoidance of prehistoric archaeological sites P-15-019556 and P-15-019559, archaeological and Native American monitoring during construction, and appropriate treatment of unearthed archaeological resources during construction, potential impacts would be reduced to less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-4.

Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.5-1 through MM 4.5-4, impacts would be less than significant.

Impact 4.5-3: The project would disturb any human remains, including those interred outside of formal cemeteries.

Historical maps indicate that a historic-period Euro-American grave may occur in the project site. While ground penetrating radar survey and subsequent test excavation failed to identify human remains, the possibility remains that they do occur in the mapped area of the grave marker (ASM, 2020a). The study further indicates that monitoring of all ground disturbing activities should occur within 100 feet of the mapped location of the grave. Implementation of Mitigation Measure MM 4.5-3 requires monitoring within 100 feet of the location, and Mitigation Measure MM 4.5-5 requires halting work and contacting the Kern County Coroner to evaluate the remains in accordance with the proper procedures and protocols in the event that human remains are inadvertently discovered during project construction. These mitigation measures would ensure that, if present, impacts to any human remains, including any impacts to the grave site associated with AVEP-RA-31, would be less than significant.

Aside from this possible historic-period grave site, the results or the records search and archaeological survey do not indicate that any other location within the project area has been used for human burial purposes in the recent or distant past. However, in the event that human remains are inadvertently discovered during project construction activities, whether in association with the grave site shown on historic maps or not, the human remains could be damaged, which could be a significant impact. Implementation of Mitigation Measures MM 4.5-3 and MM 4.5-5 would ensure that any human remains encountered are appropriately addressed and properly treated, thus reducing impacts to a less-than-significant level.

Mitigation Measures

MM 4.5-5: If human remains are uncovered during project construction, the project contractor shall immediately halt work within 100 feet of the find, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in of the California Environmental Quality Act *Guidelines* Section 15064.4(e)(1). If the County Coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code (PRC) Section 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent for the remains per PRC Section 5097.98. Per PRC Section 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 (Section 7100 et. seq.) directing identification of the next-of-kin will apply.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-3 and MM 4.5-5, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

An analysis of cumulative impacts takes into consideration the entirety of impacts that the projects discussed in Chapter 3, *Project Description*, and as shown in **Table 3-4**, *Cumulative Projects List*, of this EIR, would have on cultural resources. The geographic area of analysis of cumulative impacts for cultural resources includes the western Antelope Valley. The western Antelope Valley includes portions of the southeast corner of Kern County and portions of northern Los Angeles County. This geographic scope of analysis is appropriate because the archaeological and historical resources within this area are expected to be similar to those that occur on the project site because of their proximity, and because the similar environments, landforms, and hydrology would result in similar land-use—and thus, site types. Similar geology within this vicinity would likely yield fossils of similar sensitivity and quantity. This is a large enough area to encompass any effects of the project on cultural resources that may combine with similar effects caused by other past, current, and reasonably foreseeable future projects, and provides a reasonable context wherein cumulative actions could affect cultural resources. Multiple projects, including solar energy production facilities, are proposed throughout the western Antelope Valley. Cumulative impacts to cultural resources in the western Antelope Valley could occur if other 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, mitigation measures are included in this EIR to reduce potentially significant project impacts to cultural resources during construction of the proposed project, which would reduce the project's incremental contribution to cumulative impacts. Implementation of Mitigation Measure MM 4.5-1 requires cultural resources sensitivity training for construction workers. Mitigation Measures MM 4.5-2 and MM 4.5-3 require avoidance of prehistoric archaeological sites P-15-019556 and -019559, and archaeological and Native American monitoring during construction. Mitigation Measure MM 4.5-4 requires appropriate treatment of unearthed archaeological resources during construction, including those that qualify as historical resources. Implementation of these four 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, including human remains that may be associated with a Euro-American grave site noted on historic maps, the implementation of Mitigation Measures MM 4.5-5 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 4.5-5 as described above, the project site would not result in significant impacts to cultural resources. Given this minimal impact and similar mitigation requirements for other projects in the western Antelope Valley, cumulative impacts to cultural resources would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.5-1 through MM 4.5-5.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5, impacts would be less than significant.

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Section 4.6
Energy

4.6.1 Introduction

This energy section of the EIR analyzes the energy implications of the project, focusing on the following energy resources: electricity and transportation-related energy (petroleum-based fuels). This Energy section also includes general information relating to natural gas, however, no natural gas is proposed to be used in conjunction with the proposed project. This section includes a summary of the project's anticipated energy needs (detailed energy calculations are based on air quality outputs provided in the Air Quality/Greenhouse Gas Assessment provided in Appendix C-1 of this EIR), and conservation measures. Information in this section is primarily based on the *AVEP Solar Project – Energy Consumption Technical Memo* (Energy Technical Memorandum) prepared by First Solar (First Solar, 2020c), provided in Appendix G of this EIR. In addition, the information found herein, as well as other aspects of the project's environmental-related energy impacts, are discussed in greater detail elsewhere in this EIR, including in Chapter 3, *Project Description*, Section 4.3, *Air Quality*, and Section 4.8, *Greenhouse Gas Emissions*, of this EIR.

This section provides the content and analysis required by Public Resources Code, Section 21100(b)(3), and described in Appendix F to the *CEQA Guidelines* (AEP, 2018). Public Resources Code Section 21100(b) and Section 15126.4 of the *CEQA Guidelines* require that an EIR identify mitigation measures to minimize a project's significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F states that the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the Project Description, Environmental Setting and Impact Analysis portions of technical sections, as well as through mitigation measures and alternatives.

In late 2018, the California Natural Resources Agency finalized updates to the 2018 *CEQA Guidelines* (California Natural Resources Agency, 2018). Appendix G was amended to now include the analysis of energy. Previously included in Appendix F, the Appendix G Checklist now provides energy criteria for the analysis of wasteful energy consumption and conflicts with state or local energy efficiency plans (California Natural Resources Agency, 2018).

4.6.2 Environmental Setting

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components for distribution and use. The electricity generated is distributed through a network of transmission and distribution lines, commonly called a power grid.

Energy capacity, or electrical power, is generally measured in watts (W), while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 Wh. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Electrical services in the project area are provided by Southern California Edison (SCE). SCE obtains its energy supplies from power plants and natural gas fields in Northern California, as well as from energy purchased outside its service area and delivered through high-voltage transmission lines and pipelines. Power is generated from various sources, including fossil fuel, hydroelectric, nuclear, wind, and geothermal plants, and is fed into the electrical grid system serving Southern California.

SCE updates all load forecasts for gas and electricity services every year. Load growth forecasts for the project area are currently determined using load growth projection tools that use a number of sources of data, including past peak loading, population, development characteristics, and temperature history information. **Table 4.6-1**, *Electric Power Mix Delivered to Retail Customers in 2018*, shows the electric power mix that was delivered to retail customers for SCE compared to the statewide power mix for 2018, the most recent year in which data is available.

TABLE 4.6-1: ELECTRIC POWER MIX DELIVERED TO RETAIL CUSTOMERS IN 2018

Energy Resource	2018 SCE	2018 CA Power Mix (for comparison)[a]
Eligible Renewable	**36%**	**31%**
Biomass & bio-waste[b]	1%	2%
Geothermal	8%	5%
Eligible hydroelectric	1%	2%
Solar	13%	11%
Wind	13%	11%
Coal	**0%**	**3%**
Large Hydroelectric	**4%**	**11%**
Natural Gas	**17%**	**35%**
Nuclear	**6%**	**9%**
Other	**0%**	**<1%**
Unspecified sources of power[c]	**37%**	**11%**
Total	**100%**	**100%**

[a] Percentages are estimated annually by the California Energy Commission based on the electricity generated in California and net imports as reported to the Quarterly Fuel and Energy Report database and the Power Source Disclosure program.

[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.

SOURCE: SCE, 2019.

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs and delivered through high-pressure transmission pipelines. Natural gas provides almost one-third of the state's total energy requirements. Natural gas is measured in terms of cubic feet (cf). Southern California Gas Company is the natural gas provider in Kern County; however, there is not a known natural gas service for the project site.

Transportation

According to the California Energy Commission (CEC), transportation accounted for approximately 40 percent of California's total energy consumption in 2019 (CEC, 2019a). In 2018, California consumed 15.6 billion gallons of gasoline and 3.7 billion gallons of diesel fuel (California Department of Tax and Fee Administration 2019a and 2019b). Petroleum-based fuels currently account for more than 90 percent of California's transportation fuel use (CEC, 2016a). 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, 2016a). The CEC predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels (CEC, 2016b). According to CARB's EMFAC2017 Web Database, Kern County on-road transportation sources consumed approximately 445 million gallons of gasoline and 311 million gallons of diesel fuel in 2019 (CARB, 2019).

4.6.3 Regulatory Setting

Federal

Corporate Average Fuel Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and United States Environmental Protection Agency (USEPA) jointly administer the CAFE standards (NHTSA 2019). The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. USEPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA and NHTSA, 2016).

Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act was passed to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve the energy performance of the federal government; and increase U.S. energy security, develop renewable fuel production, and improve vehicle fuel economy. The act included the first increase in fuel economy standards for passenger cars since 1975, and also included a new energy grant program for use by local governments in implemented energy-efficiency initiatives, as well as a variety of green building incentives and programs.

State

Senate Bill 1389

Senate Bill (SB) 1389 (Public Resources Code Sections 25300–25323; SB 1389) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (Public Resources Code Section 25301[a]). The 2016 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California including energy efficiency, strategies related to data for improved decisions in the Existing Buildings Energy Efficiency Action Plan, building energy efficiency standards, the impact of drought on California's energy system, achieving 50 percent renewables by 2030, the California Energy Demand Forecast, the Natural Gas Outlook, the Transportation Energy Demand Forecast, Alternative and Renewable Fuel and Vehicle Technology Program benefits updates, update on electricity infrastructure in Southern California, an update on trends in California's sources of crude oil, an update on California's nuclear plants, and other energy issues.

California's Renewables Portfolio Standard

First established in 2002 under SB 1078, California's Renewables Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030 (CPUC, 2019).

In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that 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. Refer to Section 4.8, *Greenhouse Gas Emissions*, of this EIR for additional details regarding this regulation.

California Assembly Bill 1493 (AB 1493, Pavley)

In response to the transportation sector accounting for more than half of California's CO2 emissions, Assembly Bill (AB) 1493 (commonly referred to as CARB's Pavley regulations), enacted in 2002, requires CARB to set GHG emission standards for new passenger vehicles, light-duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009–2016 and Phase II established standards for model years 2017–2025 (CARB,2017). Refer to Section 4.8, *Greenhouse Gas Emissions*, of this EIR for additional details regarding this regulation.

California Health and Safety Code (HSC), Division 25.5/California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32 (codified in the California HSC, Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. Under HSC Division 25.5, CARB has the primary responsibility for reducing the State's GHG emissions; however, AB 32 also tasked the CEC and the CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

In 2016, SB 32 and its companion bill AB 197 amended HSC Division 25.5, established a new climate pollution reduction target of 40 percent below 1990 levels by 2030, and included provisions to ensure that the benefits of state climate policies reach into disadvantaged communities. Refer to Section 4.8, *Greenhouse Gas Emissions*, of this EIR for additional details regarding these regulations.

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS), established in 2007 through Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products, starting with 0.25 percent in 2011 and culminating in a 10-percent total reduction in 2020. Petroleum importers, refiners and wholesalers can either develop their own low carbon fuel products, or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas and hydrogen.

California Air Resources Board

CARB's Advanced Clean Car Program

The Advanced Clean Cars emissions-control program was approved by CARB in 2012 and is closely associated with the Pavley regulations. The program requires a greater number of zero-emission vehicle models for years 2015 through 2025 to control smog, soot and GHG emissions. This program includes the Low-Emissions Vehicle (LEV) regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles; and the Zero-Emissions Vehicle regulations (ZEV) to require manufactures to produce an increasing number of pure ZEV's (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEV) between 2018 and 2025.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted an Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling in order to reduce public exposure to diesel particulate matter emissions (Title 13 California Code of Regulations [CCR] Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than five minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles.

In addition to limiting exhaust from idling trucks, in 2008, CARB approved the Truck and Bus regulation to reduce NO_X, PM10, and PM2.5 emissions from existing diesel vehicles operating in California (13 CCR, Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. The phasing of this regulation has full implementation by 2023.

CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007 aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

California Environmental Quality Act

In accordance with CEQA and Appendix F, Energy Conservation, of the 2018 *CEQA Guidelines*, and to assure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the *CEQA Guidelines* provides a list of energy-related topics to be analyzed in the EIR. In addition, while not described or required as significance thresholds for determining the significance of impacts related to energy, Appendix F provides the following topics for consideration in the discussion of energy use in an EIR, to the extent the topics are applicable or relevant to the project:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;
- The effects of the project on local and regional energy supplies and on requirements for additional capacity;

- The effects of the project on peak and base period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources; and
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In late 2018, the California Natural Resources Agency finalized updates to the 2018 *CEQA Guidelines* (California Natural Resources Agency, 2018). Appendix G was amended to now include the analysis of energy. Previously included in Appendix F, the Appendix G Checklist now provides energy criteria for the analysis of wasteful energy consumption and conflicts with state or local energy efficiency plans (California Natural Resources Agency, 2018). Appendix F did not describe or require significance thresholds for determining the significance of impacts related to energy. According to the updated Appendix G Checklist, Issue VI. Energy, a project would have a significant impact on energy and energy resources if it would:

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Local

Kern County General Plan

The goals, policies, and implementation measures in the Energy Element of the Kern County General Plan (Kern County 2009) applicable to energy, as related to the project, are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project. Therefore, they are not listed below.

Chapter 5. Energy Element

5.4.5. Solar Energy Development

Goal

Goal 1: Encourage safe and orderly commercial solar development.

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Willow Springs Specific Plan

The project site is located within the Willow Springs Specific Plan area. The Willow Springs Specific Plan was adopted in 1992 (most recently revised on April 1, 2008) and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Specific Plan area. There are no specific energy-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project.

4.6.4 Impacts and Mitigation Measures

Methodology

This analysis addresses the project's potential energy usage, including electricity and transportation fuel. Energy consumption during both construction and operation is assessed. Specific analysis methodologies are discussed below. The assessment presented herein is based in part on the Energy Technical Memorandum (First Solar, 2020c) prepared for the project. A full copy of the report is provided in Appendix G of this EIR.

Construction

Electricity is not expected to be consumed in large quantity during project construction, as construction equipment and vehicles are not electric (diesel- or gas-powered). However, electricity is expected to be consumed from well-water pumping during construction. The water-related energy use during project construction was calculated using water usage assumptions provided by First Solar and includes water pump horsepower, wattage, water throughput, and total operational time.

Natural gas is not proposed to be consumed during project construction (i.e., no natural gas-powered equipment or vehicles). Therefore, natural gas associated with construction activities was not calculated.

Regarding transportation-related fuel consumption during construction, the project construction equipment and haul trucks would likely be diesel-fueled, while the construction worker commute vehicles would primarily be gasoline-fueled. Construction activity durations, off-road equipment, horsepower ratings, hours of use, and load factors were used to calculate construction-related fuel use, provided by the applicant and default assumptions from California Emissions Estimator Model (CalEEMod), version 2016.3.2. The estimated fuel economy for haul trucks and worker commute vehicles (on-road sources) is based on fuel consumption factors from the CARB EMFAC emissions model, which is a state-approved model for estimating emissions on-road vehicles and trucks. Both OFFROAD and EMFAC are incorporated into CalEEMod, which is a state-approved emissions model used for the project's air quality and GHG emissions assessment. The energy use associated with off-road equipment and on-road vehicle fuel consumption during project construction was calculated by converting GHG emissions (i.e., CO_2 emissions) estimated for the project in the *Air Quality/Greenhouse Gas Assessment* (see Appendix C-1), using the rate of CO_2 emissions emitted per gallon of combusted gasoline (8.78 kilograms/gallon) and diesel (10.18 kilograms/gallon).

Operation

Electricity would be used by the project for pumping water to the two solar facility sites as well as by the Operation and Maintenance Buildings. As with construction, water-related energy use during project operations was calculated using water usage assumptions provided by the applicant and includes water pump horsepower, wattage, water throughput, and total operational time. The energy use associated with operation of the Operation and Maintenance Building(s) (i.e., electricity consumption from staff use of lighting) was based on the total square footage of the two facilities (1,000 square feet per facility) in combination with CalEEMod defaults for energy intensity values (electricity usage per square foot per year) for non-residential buildings.

Natural gas is not proposed to be consumed during project operation. Therefore, natural gas associated with operations was not calculated.

Energy for transportation from employees to the project site was estimated based on the predicted number of trips to and from the project and the estimated VMT. The analysis assumed 20 full-time personnel consisting of plant operators, maintenance technicians, and security personnel. Pick-up trucks as well as the vehicles used by workers commuting to and from the project site are assumed to likely use gasoline. On-site operational equipment is likely to use diesel. The energy use associated with fuel consumption during project operation was derived similar to fuel consumption during construction of the project.

Thresholds of Significance

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

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Project Impacts

Impact 4.6-1: The project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Construction

Construction and decommissioning of the new solar energy generation facility is expected to require the use of non-renewable resources in the form of gasoline and diesel to power off-road construction equipment and on-road vehicles as well as electricity consumed from water pumping during construction of the project. As shown in **Table 4.6-2**, *Project Construction Energy Usage*, construction activities are expected to consume approximately 193,559 gallons of gasoline, 86,361 gallons of diesel and 395,909kWh of electricity. This would represent 0.043 percent of Kern County's annual gasoline fuel use in 2018, 0.028

percent of Kern County's annual diesel fuel use in 2018, and 0.00045 percent of the total electricity consumption in the SCE service area in 2018, respectively.

As noted above, construction of the project would not result in any natural gas consumption on the site (similarly, decommissioning of the project would not result in any natural gas consumption on the site). Therefore, the project would not result in wasteful, inefficient, or unnecessary consumption of natural gas, and impacts would be less than significant.

Energy consumption associated with decommissioning activities are anticipated to be similar to construction activities. The consumption of fuels during construction and decommissioning would be irreversible. Although construction and decommissioning activities would be temporary, the project could result in a wasteful, inefficient, or unnecessary consumption of energy resources if available control measures are not implemented. The project does not propose any energy control measures during construction. As a result, this impact would be potentially significant. Implementation of Mitigation Measure MM 4.3-1, as provided in Section 4.3, *Air Quality*, of this EIR, would require the use of energy-efficient and alternatively-fueled equipment during project construction and would also ensure compliance with Title 13, California Code of Regulations, Section 2449 et seq., which imposes construction equipment idling restrictions. Compliance with Title 13 would also help to reduce unnecessary fuel consumption during project construction. With implementation of this mitigation, the project would not result in the wasteful, inefficient, or unnecessary consumption of transportation fuels and impacts would be reduced to less than significant.

TABLE 4.6-2: PROJECT CONSTRUCTION ENERGY USAGE

Source	Total Gallons of Gasoline Fuel	Total Gallons of Diesel Fuel	Total Electricity (kWh)
Kern County (2019); SCE (2018)	**454,000,000**	**308,000,000**	**87,143,000,000**
Construction:			
Trucks	—	69,752	—
Workers	193,559	—	—
Equipment	—	16,609	—
Water Conveyance	—	—	395,909
Total	**193,559**	**86,361**	**395,909**
% of County	**0.043%**	**0.028%**	**0.00045%**

SOURCE: First Solar, 2020c; ESA, 2020.

Operation

Operational energy consumption in the form of electricity would occur as a result of solar panel maintenance and the Operation and Maintenance Building(s). However, electricity use would be offset by the power produced by the solar panels. In addition, the use of transportation fuel would be minimal and is predominately associated with worker commute trips and occasional panel washing activities. Energy use associated with long-term operational activities is summarized in **Table 4.6-3**, *Project Operational Energy Usage*. As shown, operation of the project would consume approximately 316 gallons of gasoline, 150 gallons of diesel and 703,580 kWh of electricity. This is 0.00007 percent of Kern County's annual gasoline

fuel use in 2018, 0.000049 percent of Kern County's annual diesel fuel use in 2018, and 0.0008 percent of the total electricity consumption in the SCE service area in 2018.

TABLE 4.6-3: PROJECT OPERATIONAL ENERGY USAGE

Source	Total Gallons of Gasoline Fuel	Total Gallons of Diesel Fuel	Total Electricity (kWh)
Kern County (2018); SCE (2018)	**454,000,000**	**308,000,000**	**87,143,000,000**
Trucks	14	150	
Workers	302	—	—
Equipment	—	—	—
Water Conveyance	—	—	13,214
Operation and Maintenance Building	—	—	12,990
ESS Facility[a]	—	—	677,376
Total	**316**	**150**	**703,580**
Percent of County	**0.00007%**	**0.000049%**	**0.0008%**

[a] ESS Facility energy use was obtained from the CalEEMod output provided in the Air Quality/Greenhouse Gas Assessment (see Appendix C-1)

SOURCES: First Solar, 2020c; ESA, 2020.

Total annual electricity generation is estimated to be 703,580 kWh (or 21,107,400 kWh over the life of the project), which more than offsets the energy consumed annually to operate the project (as shown in Table 4.6-3). This production is anticipated to remain relatively constant throughout operation of the project. 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. In addition, operation of the project would not result in any natural gas consumption on the site. Therefore, the project would not result in wasteful, inefficient, or unnecessary consumption of electricity or natural gas, and impacts would be less than significant.

As shown in **Table 4.6-3**, *Project Operational Energy Usage*, the project would result in 316 gallons of gasoline and 150 gallons of diesel per year, representing a fraction of a percent of the County's annual gasoline and diesel use, respectively. As stated in Section 4.15, *Transportation and Traffic*, trips to the project site would be minimal and panel cleaning would happen periodically. Based on the minimal number of trips, the negligible fuel use, and the cleaning of panels on an as-needed basis, the project would not result in wasteful, inefficient, or unnecessary consumption of transportation fuels. Overall, impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.3-1 as provided in Section 4.3, *Air Quality*, of this EIR.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM-4.3-1, impacts would be less than significant.

Impact 4.6-2: The project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Construction

Construction equipment would comply with federal, State, and regional requirements where applicable. With respect to truck fleet operators, the USEPA and 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 result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type. The energy modeling for trucks does not take into account specific fuel reductions from these regulations, since they would apply to fleets as they incorporate newer trucks meeting the regulatory standards; however, these regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with CARB regulations regarding heavy-duty truck idling limits of five minutes at a location and the phase-in of off-road emission standards that result in an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in the efficient use of construction-related energy.

Operation

In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the 33 percent RPS by 2020 and 50 percent by 2030. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the project is reasonably expected to displace region-wide and statewide emissions of GHGs over the expected life of the project. The reduction in GHG emissions are a direct result of increasing the share of renewable energy available to investor-owned utilities required to meet RPS. The project directly aligns with the goals of RPS by generating 763,000MWh of renewable electricity annually.

Furthermore, as the project would have an electric power generating capacity of approximately 250 megawatts MW (alternating current or "AC") of renewable electrical energy and up to 2,000 MWh of an Energy Storage System (ESS), the project would be consistent with the Attorney General's recommended measures to reduce GHG emissions. Specifically, the project complies with the Attorney General's Recommended Measure to "Install solar and wind power systems, solar and tank less hot water heaters, and energy-efficient heating ventilation and air conditioning." Therefore, the project would be compliant with the Attorney General's Recommended Measure regarding renewable energy. Because the project is below regional regulatory thresholds and could result in a reduction of GHG emissions, no mitigation measures are required.

With regard to the Operations and Maintenance Building(s) proposed on the project site, the building(s) would be subject to the Building Energy Efficiency Standards as required by the California Code of Regulations, Title 24, Part 6. The Building Energy Efficiency Standards are intended to save energy, increase electricity supply reliability, and avoid the need to construct new power plants. Pursuant to the

California Building Standards Code and the Energy Efficiency Standards, the County would review the design components of the project's energy conservation measures when the project's building plans are submitted. These measures could include insulation; use of energy-efficient heating, ventilation, and air conditioning equipment (HVAC); solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; reclamation of heat rejection from refrigeration equipment to generate hot water; incorporation of skylights; and other measures. The project would also be subject to CALGreen, which requires 65 percent construction solid waste diversion.

Overall, because the main objectives of the project are to assist California Investor-Owned utilities in meeting their obligations under California's RPS Program and assist California in meeting the GHG emissions reduction goal of 1990 level GHG emissions by 2020, as required by AB 32, and the future reduction goal of 40 percent below 1990 levels by 2030, the project would be compliant with the applicable recommended actions of the CARB Climate Change Scoping Plan, as well as, applicable federal, state and local policies. Specifically, the project would assist the State and regulated utility providers to generate a greater portion of energy from renewable sources consistent with the 2020 and 2030 RPS. Therefore, this impact would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts occur when the incremental effects of a project are significant when combined with similar impacts from other past, present, or reasonably foreseeable projects in a similar geographic area. As presented in Chapter 3, *Project Description*, of this EIR, there are 145 related projects located within the vicinity of the project site (6 within a 1-mile radius of the project site and 66 [including the 6 projects that are within 1 mile] within a 6-mile radius of the project site). The geographic context for the analysis of cumulative impacts on electricity is SCE's service area because the project and related projects are located within the service boundaries of SCE.

Cumulative projects in the project area listed in **Table 3-4**, *Cumulative Projects List*, largely consist of utility-scale solar power generation facilities. The nature of these projects is such that, like the project, they would be consistent with the strategies of the Climate Change Scoping Plan. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the RPS target of 33 percent of California's energy coming from renewable sources by 2020. In order to meet the SB 32 GHG emissions reduction mandate, the 2017 Scoping Plan relies on achievement of the RPS target of 60 percent of California's energy coming from renewable sources by 2030 and 100 percent renewable sources by 2045. The project and other similar projects are essential to achieving the RPS.

The main contribution of energy consumption from the project would be from construction equipment usage, haul truck trips, and employee trips during the construction phase and panel washing activities, maintenance trips, and employee trips during project operation of the project as well as electricity used for the Operations and Maintenance Building. The project's emissions would, therefore, contribute to the

increase in emissions in the transportation sector as well as electricity generation sector. Construction emissions would be finite and temporary and would cease at the end of construction activities.

Although the project would result in a contribution to cumulative energy consumption in California, construction of the project would implement Mitigation Measure MM 4.3-1, as provided in Section 4.3, *Air Quality*, of this EIR, would require the use of energy-efficient and alternatively-fueled equipment during project construction. In addition, operation of the project could offset emissions from the electricity generation sector estimated at over 763,000 MWh of renewable electricity annually. 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 project clearly would not contribute to cumulative energy consumption in California because operation of the project would provide electric power with negligible operational energy consumption over the long term when compared to traditional fossil-fueled generation technologies. Thus, the project would not have a cumulatively considerable impact on energy consumption, would not conflict with any renewable energy plans, and cumulative impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.3-1, as provided in Section 4.3, *Air Quality*, of this EIR.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.3-1, impacts would be less than significant.

Section 4.7
Geology and Soils

4.7.1 Introduction

This section of the EIR describes the geologic and soil characteristics of the project site and potential geology and soils impacts associated with construction and operation of the project and mitigation measures that would reduce these impacts, if applicable. The analysis in this section is largely based on the Report of Expected Geotechnical Conditions (Appendix H-1; Terracon, 2019), Revised Geotechnical Engineering Report – AVEP Rabbitbrush (Appendix H-2; Terracon, 2020a), Revised Geotechnical Engineering Report – AVEP Chaparral (Appendix H-3; Terracon, 2020b), and the Paleontological Resources Assessment (Appendix I; San Diego Natural History Museum [SDNHM] Department of PaleoServices, 2019) prepared for the project.

4.7.2 Environmental Setting

Regional Geologic Setting

The project is located within the Antelope Valley in the western portion of what is known as the Mojave Desert geomorphic province. The geologic features of this province are characterized by isolated mountains separated by vast desert plains which contain enclosed drainage basins (no drainage outlet to the ocean). The province is bounded by predominate northwest-southeast faults trends (San Andreas Fault) and a secondary east-west fault trend of the Garlock Fault that create a wedged shape (CGS, 2002). The Garlock Fault is a major strike-slip fault in southern California that clearly marks the northern boundary of the Mojave province and the southern ends of the Sierra Nevada (SCEDC, 2013a). The San Andreas Fault is the master fault of an intricate fault network cutting through the California coastal region; the fault extends from northern California to the San Bernardino area of southern California (SCEDC, 2013b). None of the project sites are intersected by any known faults but they are located in a region considered seismically active (Terracon, 2020a and 2020b).

Paleontological Setting

Paleontological resources are the mineralized (fossilized) remains of prehistoric plants and animals and the mineralized impressions (trace fossils) left as indirect evidence of the forma and activity of such organisms. These resources are located within sedimentary rocks or alluvium and are considered to be nonrenewable.

Formations that contain vertebrate fossils are considered more sensitive because vertebrate fossils tend to be rare and fragmentary. Formations containing microfossils, plant casts, and invertebrate fossils are more common. A significant fossil deposit is a rock unit or formation that contains significant nonrenewable paleontological resources. This is defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces, and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals such as trackways or nests and middens), which provide datable material and climatic

information. This definition excludes invertebrate or botanical fossils except when present within a given vertebrate assemblage. However, invertebrate and botanical fossils may be significant as environmental indicators associated with vertebrate fossils. The project site (Rabbitbrush Solar Facility and Chaparral Solar Facility) is entirely underlain by alluvial deposits of Holocene to Pleistocene-age that are derived from the regional erosion of the surrounding highlands. Extensive alluvial fan complexes originating from the mouths of numerous deeply incised canyons on the southeastern flanks of the Tehachapi Mountains and northeastern flanks of the San Gabriel Mountains extend out into Antelope Valley. These alluvial fan complexes have been depositing sediment since at least the early Pleistocene, with younger, Holocene-age alluvial fan complexes building on top of older, Pleistocene-age complexes. Alluvial fan complexes generally consist of coarser-grained fan deposits, originating as overland sheetwash flows from the flanks of the uplands, and finer-grained alluvial valley deposits originating in alluvial channels on the distal fringes of the fans. (SDNHM Department of PaleoServices, 2019)

Surficial geological mapping indicates the Rabbitbrush and Chaparral solar facility sites are specifically underlain by alluvial fan deposits (Qf), and undifferentiated surficial deposits (Qsu) of late Holocene-age, alluvial fan deposits (Qyf) of Holocene to late Pleistocene-age, and old alluvial fan deposits (Qof) of middle to early Pleistocene-age, with the Rabbitbrush facility additionally being underlain by late Holocene-age alluvial valley deposits (Qa). These alluvial deposits are generally derived from erosion of the surrounding highlands (e.g., Tehachapi Mountains, San Gabriel Mountains). Presumably, the Holocene-age deposits transition downsection (i.e., at depth) into older, Pleistocene-age deposits (SDNHM Department of PaleoServices, 2019).

The institutional records searches indicate that there are no known fossil collection localities from Holocene to Pleistocene-age alluvial deposits within a 1-mile radius of the Project site. However, both the Natural History Museum of Los Angeles County (LACM) and San Bernardino County Museum (SBCM) document several localities discovered in alluvial and lacustrine deposits of the western Mojave Desert, with additional fossil localities documented in the paleontological literature. These localities yielded fossil remains of large-bodied mammals (e.g., mammoth, horse, antilocaprid antelope, camel, bison, dog), as well as small mammals (e.g., rodents, bats, shrews, rabbits) and other terrestrial vertebrates (e.g., snakes, lizards, tortoises, birds). The closest localities are found about 6 miles to the east of the proposed project (SDNHM Department of PaleoServices, 2019).

Existing Paleontological Resources

The paleontological resources inventory conducted by the San Diego Natural History Museum (SDNHM) Department of PaleoServices (2019) included a geologic map review, a literature search, a record search conducted by the LACM, and a record request from the SDNHM and the SBCM. As mentioned, the geologic map and literature review indicates the project site is largely undifferentiated Quaternary alluvium, which are generally derived from erosion of the surrounding highlands, including the Tehachapi Mountains and San Gabriel Mountains.

The SDNHM, SBCM, and LACM records search conducted for the project indicates no vertebrate fossil localities have been previously recorded within a 1-mile radius of the project site. While no paleontological localities were reported from the project site, the SBCM and LACM reported several fossil localities discovered in Quaternary alluvial and lacustrine deposits of the western Mojave Desert. These localities yielded fossil remains of large-bodied mammals, such as mammoth, horse, antilocaprid antelope, camel, bison, dog, small mammals (such as rodents, bats, shrews, rabbits), and other terrestrial vertebrates (e.g.,

snakes, lizards, tortoises, birds). The SBCM reports specifically on four Lake Thompson fossil localities located about 7 miles east of the project site that were discovered during mass grading excavations for a new housing development in Rosamond and produced remains of mammoth, ground sloth, camel, and bison. Similarly, paleontological mitigation of a landfill expansion in Lancaster, about 12 miles southeast of the project site, resulted in the discovery of vertebrate fossils in deposits of Lake Thompson. While the SBCM and LACM acknowledged the presence of Quaternary alluvium throughout the western Mojave Desert, the results of the paleontological analysis found the project site underlain by Holocene to Pleistocene-age alluvial deposits at the surface with low paleontological sensitivity of the geological unit, paleontological monitoring was recommended for substantial excavations that may extend 15 feet below ground surface in areas underlain at the surface by Holocene-age alluvial deposits (Qa, Qf, Qsu, Qya, Qyf) (SDNHM Department of PaleoServices, 2019).

Local Geologic Setting

Soils and Topography

Elevations across the 1,406-acre project site range from approximately 2,720 feet above mean sea level in the northwest portion of the project site to approximately 2,480 feet above mean sea level in the southeast portion of the project site. Based on publicly available information regarding the existing subsurface conditions in the vicinity of the project and previous explorations at neighboring sites, it is expected the subsurface materials will generally consist of loose to very dense sand with variable amounts of silt and clay. Localized layers of sandy lean clay have been observed within the upper 20 feet.

Groundwater

The project site is located within the Antelope Valley Groundwater Basin. This groundwater basin includes approximately the area south of the Tehachapi Mountains and north of the San Gabriel Mountains. According to information obtained from the State Water Resources Board, average groundwater depths were recorded at approximately 118 feet below ground surface (SWRCB, 2020). Additionally, United States Geological Survey's National Water Information System recorded groundwater depths (at wells nearest the proposed project in the Rogers Lake area) at 92 feet below ground surface (bgs) (well number 010N009W27C002S) and 107 feet bgs (well number 009N009W27H002S) in March of 2016 and October of 2018, respectively (USGS, 2018).

Fault Rupture

Ground surface rupture along an earthquake fault may cause damage to aboveground infrastructure and other features and occurs when movement on a fault deep within the earth breaks through to the surface. Fault rupture is considered to be most likely to occur along the identified traces of active faults (Bryant and Hart 2007). Active faults are defined as faults with evidence of displacement in the last 11,000 years. As described above, there are no active faults that intersect the project sites nor are any located within the immediate vicinity. The nearest Earthquake Fault Zone as delineated by the Alquist-Priolo Earthquake Fault Zoning Act, is associated with the Garlock fault which is approximately 17 to 23 miles north of the project site (Terracon, 2019).

Ground Shaking

Faults located within the project site vicinity have the potential to cause ground shaking to occur on the project site; the magnitude of ground shaking experienced onsite is dependent on the distance to causative faults and the earthquake magnitude (or measure of the amount of energy released during an earthquake event). The Willow Springs fault is located just north of the Chaparral and Rabbitbrush sites (USGS, 1963). However, according to the preliminary geotechnical report, the absolute age of latest displacement is not available, though consensus information indicates that the latest age of activity is pre-Holocene. Therefore, the Willow Springs fault is considered inactive for planning and design purposes. **Table 4.7-1**, *Historic Earthquakes in Project Area Vicinity*, shows some of the significant historical earthquakes that have occurred in the region and their magnitude.

TABLE 4.7-1: HISTORIC EARTHQUAKES IN PROJECT AREA VICINITY

Earthquake (Year)	Approximate Distance to Site (miles)	Earthquake Magnitude
Mojave (1992)	35	5.7
Tejon Ranch (1988)	25	5.4
Kern County (1952)	35	7.5

SOURCE: SCEDC, 2016.

The fault with the most potential to effect the site from a design standpoint, is the San Andreas fault. The San Andreas has a maximum credible earthquake potential of 7.89 which is enough to cause substantive groundshaking at the sites. (Terracon, 2019)

Landslides

The project site is relatively flat with no substantive slopes and is not expected to have any landslide potential (Terracon, 2019).

Liquefaction and Lateral Spreading

Liquefaction is a type of ground failure resulting from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. Based on the documented depth of groundwater and subsurface conditions, the potential for liquefaction at the project site is considered low. Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also considered low (Terracon, 2019).

Soil Erosion

Soil erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind and subsurface water flow. Excessive soil erosion can eventually lead to damage of building foundations and roadways. In general, areas that are most susceptible to erosion are those that would be exposed during the construction phase when earthwork activities disturb soils and require temporary stockpiling. Typically, the soil erosion potential is reduced once the soil is

graded and covered with concrete, structures, asphalt, or slope protection, however changes in drainage patterns can also cause areas to be susceptible to the effects of erosion. There are many factors contributing to soil erosion. Soils containing high silt content have the highest soil erodibility since they are easily detached, tend to crust and produce high rates of runoff (MSU, 2020a). Coarse textured soils, or sandy soils, are easily detached but typically do not produce a lot of runoff, so they have low soil erodibility.

Soils types onsite have not been mapped by the Natural Resources Conservation Service (NRCS, 2020); however, a technical report prepared for the project stated that onsite soils will generally consist of loose to very dense sand with variable amounts of silt and clay (Terracon, 2019). Therefore, the soils onsite likely have a moderate to high erosion potential. Long slope length and high slope steepness contribute to higher erosion rates (MSU, 2020b); since the site is relatively flat, erosion potential related to slope length and slope steepness is low. Minimal to no vegetation cover contributes to high erosion rates (MSU, 2020c). The site is currently undeveloped (with the exception of two residences and residential accessory structures) and contains minimal vegetation (Terracon, 2019); therefore, the site has a higher erosion potential with respect to vegetative cover.

Subsidence

Subsidence is the sinking of the ground surface; there are four types of subsidence that are currently occurring within Kern County. Tectonic subsidence refers to the long-term slow sinking of the land surface. Subsidence can also occur naturally when moisture-deficient soils are exposed to water, which causes collapse. Subsidence has also been caused by human activities including the extraction of oil and gas and the withdrawal of groundwater. Specific areas identified as experiencing subsidence within the County include the San Joaquin Valley, a large area south of Bakersfield and parts of the California Aqueduct (Kern County, 2009).

Soil Collapse

Collapsible soils consist of loose, dry, low-density materials that collapse, compact and change in settlement under the addition of water or excessive loading, often resulting in severe damage to structures. These soils are distributed throughout the southwestern United States, specifically in areas of young alluvial fans, debris flow sediments, and loess (wind-blown sediment) deposits (AEEG, 2017). Subgrade soils on the project site exhibit a slight collapse potential when saturated and tested at an approximate surcharge pressure of 2,000 pounds per square foot (Terracon, 2019).

Expansive Soils

Expansive soils contain clay types capable of absorbing water in a manner that results in volumetric changes. Over long term periods of cyclical changes in water content, these volumetric changes can end up causing damage to foundations, retaining walls, sidewalks, and roadways. According to the preliminary geotechnical investigation, clayey soils expected at the near surface of the site are likely to have low to medium plasticity with low expansion potential (Terracon, 2019).

4.7.3 Regulatory Setting

Geologic resources and geotechnical hazards are governed primarily by local jurisdictions. The conservation elements and seismic safety elements of city and county general plans contain policies for the protection of geologic features and avoidance of hazards.

The California Environmental Quality Act (CEQA) is the major environmental statute that guides the design and construction of projects on nonfederal lands in California. This statute establishes a specific process for environmental impact analysis and public review. In addition, the project proponent must comply with other applicable federal, State, and local statutes, regulations, and policies. Relevant and potentially relevant statutes, regulations, and policies are discussed below.

Federal

Clean Water Act (Erosion Control)

The Federal Clean Water Act (CWA) (33 USC 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint-source discharges to jurisdictional waters of the United States. Such discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). The project site is within the jurisdiction of the Lahontan RWQCB. For purposes of regulating non-point source storm water discharges, projects that disturb one or more acres may be required to obtain NPDES coverage under the Construction General Permit if the project is deemed to discharge to a water of the United States. Because the project is in a terminal drainage area of Kern County (i.e., does not drain to a waters of the United States), NPDES coverage is not expected to be required as discussed further below.

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which includes best management practices (BMPs) to regulate stormwater runoff, including measures to prevent soil erosion. Requirements of the CWA and associated SWPPP are described in further detail in Section 4.9, *Hydrology and Water Quality*.

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1997 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by NEHRP, which refined the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under

NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the project would be required to adhere.

Paleontological Resources

A variety of federal statutes specifically address paleontological resources. They are generally applicable to a project if that project includes federally owned or federally managed lands or involves a federal agency license, permit, approval, or funding. The first of these is the Antiquities Act of 1906 (54 U.S.C. 320301–320303 and 18 U.S.C. 1866(b)), which calls for protection of historic landmarks, historic and prehistoric structures, as well as other objects of historic or scientific interest on federally administered lands, the latter of which would include fossils. The Antiquities Act both establishes a permit system for the disturbance of any object of antiquity on federal land and also sets criminal sanctions for violation of these requirements. The Antiquities Act was extended to specifically apply to paleontological resources by the Federal-Aid Highways Act of 1958. More recent federal statutes that address the preservation of paleontological resources include the National Environmental Policy Act, which requires the consideration of important natural aspects of national heritage when assessing the environmental impacts of a project (P.L. 91-190, 31 Stat. 852, 42 U.S.C. 4321–4327). The Federal Land Policy Management Act of 1976 (P.L. 94-579; 90 Stat. 2743, U.S.C. 1701–1782) requires that public lands be managed in a manner that will protect the quality of their scientific values, while Title 40 Code of Federal Regulations Section 1508.2 identifies paleontological resources as a subset of scientific resources. The Paleontological Resources Preservation Act (Title VI, Subtitle D of the Omnibus Land Management Act of 2009) is the primary piece of federal legislation.

Paleontological Resources Preservation Act

The Paleontological Resources Preservation Act offers provisions of paleontological resources identified on federal, Native American, or state lands and guidance for their management and protection, and promotes public awareness and scientific education regarding vertebrate fossils. The law also requires federal agencies to develop plans for inventory, collection, and monitoring of paleontological resources and establishes stronger criminal and civil penalties for the removal of scientifically significant fossils on federal lands

State

The Alquist-Priolo Earthquake Fault Zoning Act of 1972

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (formerly the Special Studies Zoning Act), regulates the development and construction of buildings intended for human occupancy to avoid hazards associated with surface fault rupture. In accordance with this law, the California Geological Survey maps active faults and designates Earthquake Fault Zones along mapped faults. This act groups faults into categories (i.e., active, potentially active, or inactive). Historic and Holocene faults are considered active, Late Quaternary and Quaternary faults are considered potentially active, and pre-Quaternary faults are considered inactive. These classifications are qualified by conditions. For example, a fault must be shown to be "sufficiently active" and "well defined" through detailed site-specific geologic explorations to determine whether building setbacks should be established. Any project that involves the construction of buildings or structures for human occupancy, such as an operations and maintenance building, is subject to review under the Alquist-Priolo Earthquake Fault Zoning Act, and any structures for human occupancy must be located at least 50 feet from any active fault.

The Seismic Hazards Mapping Act of 1990

In accordance with PRC Chapter 7.8, Division 2, the California Geologic Survey (CGS) is directed to delineate seismic hazard zones. The purpose of the act is to reduce the threat to public health and safety and minimize the loss of life and property by identifying and mitigating seismic hazards, such as those associated with strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes. Cities, counties, and State agencies are directed to use seismic hazard zone maps developed by the California Geological Survey in their land use planning and permitting processes. In accordance with the Seismic Hazards Mapping Act, site-specific geotechnical investigations must be performed prior to permitting most urban development projects within seismic hazard zones.

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, means of egress facilities, and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under State law, all building standards must be centralized in Title 24 or they are not enforceable. The provisions of the CBC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The 2019 edition of the CBC is based on the 2018 IBC published by the International Code Council. The code is updated triennially, and the 2019 edition of the CBC was published by the California Building Standards Commission in 2019, and took effect starting January 1, 2020. The 2019 CBC contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standard ASCE/SEI 7-10, *Minimum Design Loads for Buildings and Other Structures*, provides requirements for general structural design and includes means for determining earthquake loads[1] as well as other loads (such as wind loads) for inclusion into building codes. 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

[1] 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.

category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site; SDC ranges from A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Seismic design specifications are determined according to the SDC in accordance with Chapter 16 of the CBC. Chapter 18 of the CBC covers the requirements of geotechnical investigations (Section 1803), excavation, grading, and fills (Section 1804), load-bearing of soils (1806), as well as foundations (Section 1808), shallow foundations (Section 1809), and deep foundations (Section 1810). For Seismic Design Categories D, E, and F, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

Chapter 18 also describes analysis of expansive soils and the determination of the depth to groundwater table. Expansive soils are defined in the CBC as follows:

> **1803.5.3 Expansive Soil.** In areas likely to have expansive soil, the building official shall require soil tests to determine where such soils do exist. Soils meeting all four of the following provisions shall be considered expansive, except that tests to show compliance with Items 1,2 and 3 shall not be required if the test prescribed in Item 4 is conducted:
>
> 1. Plasticity index (PI) of 15 or greater, determined in accordance with ASTM D 4318.
> 2. More than 10 percent of the soil particles pass a No. 200 sieve (75 micrometers), determined in accordance with ASTM D 422.
> 3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D 422.
> 4. Expansion index greater than 20, determined in accordance with ASTM D 4829.

Public Resources Code Section 5097.5 and Section 30244

Other state requirements for paleontological resource management are included in Public Resources Code (PRC) Section 5097.5 and Section 30244; of these two PRC sections, only the latter (Section 30244) applies to the project as the former (Section 5097.5) is only applicable to projects on public land. 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 archaeological or paleontological resources.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, in cooperation with the CWA, established the SWRCB. The SWRCB and the nine RWQCBs are responsible for protecting California's surface water and groundwater supplies. Section 13000 of the act directs each RWQCB to develop Water Quality Control Plans for all areas in its region, to designate the beneficial uses of California's rivers and groundwater basins; these plans are the basis for each board's regulatory program.

The Basin Plan gives direction on the beneficial uses of state waters in Region 6, describes the water quality that must be maintained to support such uses, and includes programs, projects, and other actions necessary to achieve the standards established in the Basin Plan. The Lahontan RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges may affect water quality. These requirements are state Waste Discharge Requirements for discharge to land or federally delegated NPDES permits for discharges to surface water. Responsibility for implementing CWA Sections 401–402 and Section 303(d) is also outlined in the Porter-Cologne Water Quality Control Act.

State Regional Water Quality Control Board, Stormwater General Construction Permit

The five-member SWRCB allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine RWQCBs in the major watersheds of the state. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters.

In 1999, the state adopted the NPDES General Permit for Stormwater Discharges Associated with Construction Activities (Construction Activities General Permit) (SWRCB Order No. 2012-0006-DWQ, NPDES No. CAS000002). The General Construction Permit generally requires that construction sites with 1 acre or greater of soil disturbance, or less than 1 acre but part of a greater common plan of development, apply for coverage for discharges under the General Construction Permit by submitting a Notice of Intent for coverage, developing a stormwater pollution prevention plan (SWPPP), and implementing best management practices to address construction site pollutants if the project is deemed to discharge into a water of the United States. However, as the project site is in a terminal drainage area of Kern County (e.g., does not drain to a waters of the United States), NPDES coverage is not expected to be required as described in further detail in Section 4.10, *Hydrology and Water Quality*.

The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list the best management practices (BMP) the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP. Enrollment under the General Construction Permit is through the Stormwater Multiple Application and Report Tracking System. Additionally, the SWRCB is responsible for implementing the CWA and issues NPDES permits to cities and counties through the individual regional boards.

Local

Construction and operation of the solar facility would be subject to all applicable policies and regulations contained within the general and specific plans, including the Kern County General Plan, Willow Springs Specific Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to geology and soils. The policies, goals, and

implementation measures in the Kern County General Plan related to geology and soils that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, Introduction, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference. Additionally, the policies, goals, and implementation measures in the Willow Springs Specific Plan related to geology and soils that are applicable to the project are provided below.

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 Measure

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Chapter 4. Safety Element

4.1 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 Measures

Measure B: Require geological and soils engineering investigations in identifying significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.

Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.

4.5 Landslides, Subsidence, Seiche, and Liquefaction

Policies

Policy 1: Determine the liquefaction potential at sites in areas of shallow groundwater (Map Code 2.3) prior to discretionary development and determine specific mitigation to be incorporated into the foundation design, as necessary, to prevent or reduce damage from liquefaction in an earthquake.

Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

Willow Springs Specific Plan

The project site (approximately 1,406 acres) is within the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in 1992 and amended in 2008 as part of the Land Use, Open Space, and Conservation Element of the Kern County General Plan. Its goals, policies, and standards are compatible with those of the Kern County General Plan, but are tailored to the particular needs of the expanded Willow Springs area. The geology and soils-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project are outlined below (Kern County Department of Planning and

Development Services, 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included.

Seismic/Safety Element

Goals

Goal 1 To preserve cultural resources contained on sensitive sites located within the Willow Springs Specific Plan area.

Policy

Policy 1 Compliance with site-specific issues, goals, policies, and implementation measures contained in the Seismic/Safety Element of the Kern County General Plan.

Mitigation/Implementation Measures

Measure 4e The slope and foundation designs for all structures shall be based on detailed soils and engineering studies.

Kern County Code of Building Regulations (Title 17 of the Ordinance code of Kern County)

All construction in Kern County is required to conform to the Kern County Building Code (Chapter 17.08, Building Code, of the Kern County Code of Regulations). Kern County has adopted the CBC, 2016 Edition, with some modifications and amendments. The entire County is in Seismic Zone 4, a designation previously used in the Uniform Building Code (UBC) to denote the areas of highest risk for earthquake ground motion. California has an unreinforced masonry program that details seismic safety requirements for Zone 4. Seismic provisions associated with Seismic Zone 4 have been adopted (Kern County, 2017).

Chapter 17.28. Kern County Grading Code

The purpose of the Kern County Grading Code (Chapter 17.28, Building Code, of the Kern County Code of Regulations) sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction (Kern County, 2017). Sections of the Grading Code that are particularly relevant to geology and soils are provided below.

Section 17.28.140. Erosion Control

A. Slopes. The faces of cut-and-fill slopes shall be prepared and maintained to control erosion. This control may consist of effective planting. Protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

B. Other Devices. Where necessary, check dams, cribbing, riprap, or other devices or methods shall be employed to control erosion and provide safety.

C. Temporary Devices. Temporary drainage and erosion control shall be provided as needed at the end of each work day during grading operations, such that existing drainage channels would not be blocked.

Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

Section 17.28.170. Grading Inspection

A. General. All grading operations for which a permit is required shall be subject to inspection by the building official. Professional inspection of grading operations and testing shall be provided by the civil engineer, soils engineer, and the engineering geologist retained to provide such services in accordance with Subsection 17.28.170(E) for engineered grading and as required by the building official for regular grading.

B. Civil Engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade, and surface drainage of the development area. If revised plans are required during the course of the work they shall be prepared by the civil engineer.

C. Soils Engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the building official and the civil engineer.

D. Engineering Geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.

E. Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this Code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the building official. In the event of changed conditions, the permittee shall be responsible for informing the building official of such change and shall provide revised plans for approval.

F. Building Official. The building official may inspect the project at the various stages of the work requiring approval to determine that adequate control is being exercised by the professional consultants.

G. Notification of Noncompliance. If, in the course of fulfilling their responsibility under this chapter, the civil engineer, the soils engineer, or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the building official. Recommendations for corrective measures, if necessary, shall also be submitted.

H. Transfer of Responsibility. If the civil engineer, the soils engineer, or the engineering geologist of record is changed during the course of the work, the work shall be stopped until:

1. The civil engineer, soils engineer, or engineering geologist, has notified the building official in writing that they will no longer be responsible for the work and that a qualified replacement has been found who will assume responsibility.

2. The replacement civil engineer, soils engineer, or engineering geologist notifies the building official in writing that they have agreed to accept responsibility for the work.

Kern County Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The Kern County Public Works Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the applicant to provide background information on construction activities. Applicants must apply for the permit under one of the following four conditions:

1. All storm water is retained onsite and no storm water runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.
2. All storm water runoff is not retained on site, but does not discharge to a Water of the United States (i.e., drains to a terminal drainage facility). Therefore, a SWPPP has been developed and BMPs must be implemented.
3. All storm water runoff is not retained on site, and the discharge is to a Water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control Board prior to issuance of the building permit. Also, a SWPPP has been developed and BMPs must be implemented.
4. Construction activity is between one to five acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

Kern County Public Health Services Onsite Wastewater Treatment System Permitting

The Kern County Public Health Services Department is responsible for permitting, inspecting, and approving onsite wastewater treatment systems, including septic tank wastewater disposal systems. The agency provides leach line requirements, seepage pit requirements, percolation testing standards, and other regulations for land development related to wastewater treatment systems.

4.7.4 Impacts and Mitigation Measures

Methodology

Potential significant impacts associated with the project site were identified based on a review of available online sources, the Report of Expected Geotechnical Conditions (Appendix H-1; Terracon, 2019), the Geotechnical Engineering Report – AVEP Rabbitbrush and AVEP Chaparral (Appendix H-2 and H-3; Terracon, 2020a and 2020b), and the paleontological resources assessment report (SDNHM Department of PaleoServices, 2019) located in Appendix I of this EIR, which presents findings, conclusions, and recommendations concerning development of the project based on an engineering analysis of geotechnical properties of the subsurface conditions and evaluation of the underlying soils.

The loss of any identifiable fossil that could yield information important to prehistory, or that embodies the distinctive characteristics of a type of organism, environment, period of time, or geographic region, would be a significant environmental impact. Direct impacts to paleontological resources primarily concern the potential destruction of nonrenewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information (significant impact). At the project-specific level, direct impacts can be mitigated to a less-than-significant level through the implementation of paleontological mitigation.

The CEQA threshold of significance for a significant impact to paleontological resources is reached when a project is determined to "directly or indirectly destroy a significant paleontological resource or unique geologic feature." In general, for projects that are underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts to paleontological resources. For projects that are directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units which underlie the non-sensitive unit are also affected.

Thresholds of Significance

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

A project would have a significant adverse effect on geology and soils if it would:

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
   - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
   - Strong seismic ground shaking;
   - Seismic-related ground failure, including liquefaction;
   - Landslides.

b. Result in substantial soil erosion or the loss of topsoil;

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems 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.

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 sites are located in the highly seismic southern California region within the influence of multiple faults, they are not located within or within close proximity to a State of California Alquist-Priolo Earthquake Fault Zone; therefore, fault rupture would not likely occur. The nearest Earthquake Fault Zone as delineated by the Alquist-Priolo Earthquake Fault Zoning Act, is associated with the Garlock fault and is approximately 17 to 23 miles north of the project sites (Terracon, 2019). Due to the distance from the nearest active fault to the project sites, the potential for surface fault rupture at the project sites is considered negligible.

In addition, construction of the project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2016 Edition (CCR Title 24). Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with the project. Based on the absence of any known active faults that cross or come anywhere near the project site, and the project compliance with applicable ordinances of the Kern County Building Code, impacts related to fault rupture would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.7-2: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.

As stated previously, the project sites are in a highly seismic region that could experience one or more substantive seismic events in the future. Depending on the magnitude, distance to the source, and duration of shaking, damage to the PV modules, O&M Building(s), or other ancillary facilities and injury to workers or visitors could result. However, because the proposed project would not establish a permanent on-site population beyond the approximate 10 full-time or part-time employees located at each O&M facility (for a total of 20 employees) during operations and maintenance, damage to these on-site structures would not expose a substantial number of people to potential adverse effects due to strong seismic ground shaking.

In addition, prior to the issuance of grading permits, the project proponent would be required to design project infrastructure to withstand substantial ground shaking in accordance with all applicable ordinances of the Kern County Building Code (Chapter 17.08) and the current CBC. In addition, as described below, Mitigation Measure MM 4.7-1 requires that a geotechnical study to evaluate soil conditions and geologic hazards be performed by a qualified geotechnical engineer on the project site. Mitigation Measure MM 4.7-1 requires that a California geotechnical engineer be hired by the proponent to design the project facilities to withstand probable seismically induced ground shaking. All grading and construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the seismic recommendations provided by the California-registered professional engineer in accordance with California and Kern County Building Code requirements. The required measures would encompass site preparation, foundation specifications, and protection measures for buried metal. The final structural designs would be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements would be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design would be submitted to the Kern County Planning and Natural Resources Department. Further, the facilities would be constructed in accordance with all applicable codes, which require property line and public roadway setbacks that would protect the general public and onsite staff from potential hazards associated with the facilities that could result from an earthquake. Adherence to the requirements of the Kern County Building Code, the CBC and Mitigation Measure MM 4.7-1 would ensure that seismic hazards would be minimized; impacts related to ground shaking would be less than significant.

Mitigation Measures

MM 4.7-1: Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a final engineering design specific geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it to the Kern County Public Works Department for review and approval.

a. The final geotechnical study must be signed by a California-registered and licensed professional geotechnical engineer or engineering geologist and must include, but not be limited to, the following:

   i. Location of fault traces and potential for surface rupture and groundshaking potential;

   ii. Maximum considered earthquake and associated ground acceleration for design;

   iii. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils;

   iv. Stability of any existing or proposed cut-and-fill slopes;

   v. Collapsible or expansive soils;

   vi. Foundation material type;

   vii. Potential for wind erosion, water erosion, sedimentation, and flooding;

   viii. Location and description of unprotected drainage that could be impacted by the proposed development; and,

ix. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground.

b. The project proponent shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards. The project proponent shall not locate project facilities on or immediately adjacent to an active fault trace. All structures shall be offset at least 100 feet from any mapped fault trace. Alternatively, a detailed fault trenching investigation may be performed to accurately locate the fault trace(s) to avoid sighting improvements on or close to these fault structures and to evaluate the risk of fault rupture. After locating the fault, accurate setback distances can be proposed.

c. The final geotechnical report shall be submitted for review and approval by the Kern County Public Works Department. The Kern County Public Works Department shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided. Final design requirements shall also be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.7-1, impacts would be less than significant.

Impact 4.7-3: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving seismic-related ground failure, including liquefaction.

Seismically induced liquefaction occurs when loose, water-saturated sediments of relatively low density are subjected to cyclic shaking that causes soils to lose strength or stiffness because of increased pore water pressure. Liquefaction generally occurs when the depth to groundwater is less than 50 feet. Based on review of available groundwater data in the site vicinity, groundwater in the area is reported to be more than 50 feet below ground surface. The Report of Expected Geotechnical Conditions (Terracon, 2019) stipulates in part that based on the historical depth to groundwater, liquefaction hazard potential is considered to be low. Furthermore, the project is not located within a current, mapped California Liquefaction Hazard Zone. Structures constructed as part of the project would be required by state law to be constructed in accordance with all applicable IBC and CBC earthquake construction standards, including those relating to soil characteristics. Building code requirements may include, but are not limited to, ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. Adherence to all applicable regulations would avoid any potential impacts to structures resulting from liquefaction at the project. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.7-4: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving landslides.

As discussed in the IS/NOP, the project is located in a relatively flat-lying plain, does not contain any steep slopes, and the likelihood of landslides is very low. The Report of Expected Geotechnical Conditions (Terracon, 2019) stipulates in part that geologic hazards associated with slopes, landslides, and rock fall hazards are negligible. Therefore, adverse effects related to landslides are not anticipated to occur or pose a hazard to the project or surrounding area and impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.7-5: The project would result in substantial soil erosion or the loss of topsoil.

Construction of the project sites would involve earth-disturbing activities that could expose soils to the effects of wind or water erosion. Although the project site consists of relatively flat topography and would not involve substantive cut and fill operations, earthmoving and construction activities could loosen soil, and the removal of existing minimal vegetation could contribute to soil loss and erosion. However, since the project would not contain all stormwater runoff onsite, a SWPPP would be prepared and implemented per the requirements of the Kern County NPDES Program. The SWPPP would detail that existing vegetation and topography are to be preserved to the maximum extent possible. The SWPPP would also specify various types of BMPs including erosion control BMPs to prevent soil from moving offsite; all temporary erosion control measures required by the Kern County Grading Code (Chapter 17.28.140) would be incorporated into the SWPPP (Mitigation Measure MM 4.10-2). Also, per Mitigation Measure MM 4.7-1, the project would be required to submit grading plans accompanied by a soils engineering report, engineering geology report, and drainage calculations pursuant to the Kern County Grading Code (Section 17.28.070) to the Kern County Engineering and Survey Services Department in order to obtain required grading permits. Compliance with MM 4.7-1 would ensure that excessive grading does not occur. As a result, project construction would have less-than-significant impacts related to erosion with implementation of Mitigation Measures MM 4.7-1 and MM 4.10-2.

Project operations would include the periodic cleaning of the panels with water; however, this is not expected to result in soil erosion because infrequency of these activities and the limited volumes of water involved; water is expected to infiltrate into the ground and not generate substantial erosion or soil loss. Project operations would not entail ground disturbance of area which has not previously been subjected to disturbance. As a result, project operation would have a less than significant impact with relation to soil erosion.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 and MM 4.10-2.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 and 4.10-2, impacts would be less than significant.

Impact 4.7-6: The project would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

As stated above, the proposed project would result in no impact related to landslides. The geotechnical report prepared for the EIR concluded that the liquefaction potential on the project site is low, largely based on the groundwater depth in the area which is reportedly greater than 100 feet below ground surface. As a result, combined with the relatively flat topography the low liquefaction potential indicates a low potential for lateral spreading. While the preliminary geotechnical report does not discuss the collapse potential at the site, it does describe the surface soils as loose to very dense sand. Therefore, any substantive areas containing loose sands could potentially be susceptible to collapse. Further pre-construction subsurface exploration to confirm the subsurface conditions was recommended in the preliminary geotechnical report. This site specific exploration would be included as part of the design level geotechnical investigation required by Mitigation Measure MM 4.7-1. The subsurface data would be used to complete the final design of the Project and associated structures in consultation with the County in a manner that meets applicable State and County building, grading and construction codes, ordinances and standards. Therefore, since the project site itself has not been identified by the County as being prone to subsidence and the full geotechnical study required by Mitigation Measure MM 4.7-1 would be prepared for the proposed project to identify and remedy any soil conditions considered to be geologic hazards, including liquefaction, collapse and subsidence. Based on the conclusions of the report, recommended mitigation measures would be implemented to minimize geologic hazard-related impacts. With implementation of Mitigation Measure MM 4.7-1, impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.7-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.7-1, impacts would be less than significant.

Impact 4.7-7: The project would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

The preliminary geotechnical report for the site concluded that clayey soils expected at the near surface of the site are likely to have low to medium plasticity with low expansion potential (Terracon, 2019). The shrink swell behavior of expansive soils can lead to damage of project improvements over time if not

addressed appropriately prior to construction. However, as described above, Mitigation Measure MM 4.7-1 requires that a geotechnical study to evaluate soil conditions and geologic hazards be performed by a qualified geotechnical engineer on the project site. Mitigation Measure MM 4.7-1 requires that a California geotechnical engineer include an evaluation for expansive soils and provide recommendations consistent with CBC requirements to reduce potential adverse effects from expansive soils. All grading and construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the recommendations provided by the California-registered professional engineer in accordance with California and Kern County Building Code requirements. The required measures would encompass site preparation such as treatment of expansive soils or replacement with engineered fill. The final designs would be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements would be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. Therefore, with implementation of Mitigation Measure MM 4.7-1, impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.7-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure 4.7-1, impacts would be less than significant.

Impact 4.7-8: The project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.

The project may include a septic system at each of the three O&M Building(s) if portable bathroom facilities to accommodate the 20 onsite employees are not selected for wastewater disposal. A septic system and leach field would be constructed to comply with applicable requirements of the Kern County Environmental Health Services Division. The Environmental Health Services Division's "Standards for Land Development" include the aspects of sewage and preservation of environmental health and include measures to demonstrate the adequate drainage of wastewater prior to project approval. The standards are intended to safeguard the public health and are enforced by the County's Environmental Health Division. Adherence to these County requirements would ensure that soils at the site are capable of adequately supporting the volume of wastewater that would be necessary for project operations. Therefore, impacts related to the onsite soils ability to support the proposed septic system would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.7-9: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, as defined in CEQA Guidelines Section 15064.

Surficial deposits of the project site consisting of the Rabbitbrush and Chaparral solar facilities are specifically underlain by alluvial fan deposits and undifferentiated surficial deposits of late Holocene-age, alluvial fan deposits of Holocene to late Pleistocene-age, and old alluvial fan deposits of middle to early Pleistocene-age younger Quaternary alluvium. The younger Quaternary alluvium is typically not paleontologically sensitive; however, it may be underlain by older Quaternary deposits (between Holocene and Pleistocene-age), which may contain significant vertebrate fossils. Earthwork that would extend greater than about 15 feet below existing grade in areas underlain at the surface by Holocene-age alluvial deposits have the potential to impact paleontological resources. If encountered, disturbance of significant vertebrate fossils would result in a potentially significant impact to paleontological resources. Therefore, although surface grading and very shallow excavation within the younger Quaternary alluvium is unlikely to impact sensitive paleontological resources, excavations deeper than 15 feet could extend into the older Quaternary alluvium and impact significant vertebrate fossil resources. This would result in a potentially significant impact to paleontological resources. However, with implementation of Mitigation Measures MM 4.7-2 through MM 4.7-4, which would require Paleontological Resources Awareness Training for construction workers, use of a qualified paleontological monitor during construction activities, and appropriate treatment of accidentally uncovered paleontological resources, impacts to paleontological resources would be reduced to less than significant.

Mitigation Measures

MM 4.7-2: 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.

a. 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. The training guide may be presented in video form.

b. Paleontological Resources Awareness Training may be conducted in conjunction with other awareness training requirements.

c. The training shall include an overview of potential paleontological resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of paleontological resources.

d. The project operator shall ensure all new employees who have not participated in earlier Paleontological Resources Sensitivity Trainings shall meet the provisions specified above.

e. The Paleontological Resources Awareness Training Guides shall be kept available for all personnel to review and be familiar with as necessary.

MM 4.7-3: A qualified paleontologist or designated monitor shall be onsite initially to spot-check excavations below a depth of one foot below the ground surface in areas of undetermined paleontological potential. If it is determined that sediments consist of older alluvium, then full-time paleontological monitoring shall ensue within that area. If sediments are determined to consist of Holocene Quaternary alluvium, paleontological monitoring shall not be required unless an excavation depth of 15 feet below the ground surface is reached in the area. The use of post-driving or rotary drilling shall not require monitoring.

a. The duration and timing of monitoring shall be determined by the qualified paleontologist in consultation with the Kern County Planning and Natural Resources Department, and shall be based on a review of geologic maps and grading plans.

    i. During the course of monitoring, if the paleontologist can demonstrate based on observations of subsurface conditions that the level of monitoring should be reduced, the paleontologist, in consultation with the Kern County Planning and Natural Resources Department, may adjust the level of monitoring to circumstances, as warranted.

b. Paleontological monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments. The qualified paleontologist shall have authority to temporarily divert excavation operations away from exposed fossils to collect associated data and recover the fossil specimens if deemed necessary.

c. Following the completion of construction, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources onsite. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, recovery and curation efforts, and the methods used in these efforts, as well as describe the fossils collected and their significance. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to an appropriate repository such as the Natural History Museum of Los Angeles County.

MM 4.7-4: 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.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-2 through MM 4.7-4, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Impacts of the project would be considered cumulatively considerable if they would have the potential to combine with other past, present, or reasonably foreseeable projects to become significant. Cumulative projects listed in **Table 3-4**, *Cumulative Projects List*, would be subject to relatively similar seismic hazards as that of the proposed project. However, the effects of these projects are not of a nature to cause cumulatively significant effects from geologic impacts or on soils because such impacts are site specific and would only have the potential to combine with impacts of the project if they occurred in the same location as the project.

Development of the project, with implementation of the regulatory requirements discussed above, would result in less-than-significant impacts related to exposing persons or structures to geology, soils, or seismic hazards. Although the entire region is a seismically active area, geologic and soil conditions vary widely within a short distance, making the cumulative context for potential impacts resulting from exposing people and structures to related risks one that is more localized or even site-specific. Similar to the project, other projects in the area would be required to adhere to the same California and Kern County Building Codes which would reduce the risk to people and property to less-than-significant levels. While future seismic events cannot be predicted, adherence to all federal, State, and local programs, requirements and policies pertaining to building safety and construction would limit the potential for injury or damage to a less-than-significant level. Therefore, the project, combined with past, present, and other foreseeable development in the area, would not result in a cumulatively significant impact by exposing people or structures to risk related to geologic hazards, soils, and/or seismic conditions. Therefore, the project would result in less-than-significant cumulative impacts related to geology and soils.

Surficial deposits, namely erosion and sediment deposition, can be cumulative in nature, depending on the type and amount of development proposed in a given geographical area. The cumulative setting for soil erosion consists of existing, planned, proposed, and reasonably foreseeable land use conditions in the region. However, construction constraints are primarily based on specific sites within a proposed development and on the soil characteristics and topography of each site. Individual projects are required to comply with applicable codes, standards, and permitting requirements (e.g., preparation of a SWPPP) to mitigate erosion impacts. The proposed project's compliance with these codes, standards and permitting requirements are required by Mitigation Measures MM 4.7-1 and MM4.10-2. 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 Measure MM 4.7-1, the project would not contribute to any cumulative impacts for geologic, seismic hazards or related events. Cumulative impacts related to geology and soils are less than significant.

The geographic scope for cumulative effects to paleontological resources includes the western portion of the Antelope Valley, which includes the Mojave Desert that surrounds the area of the proposed project. Given similarities in geologic formations, this area is expected to contain similar types of paleontological resources. There is no temporal scope because direct impacts to paleontological resources are permanent. Cumulative impacts to paleontological resources in the study area could occur if other related projects, in conjunction with the proposed project, had or would have impacts on paleontological resources that, when considered together, would be significant. Development of the proposed project, in combination with other

projects in the area, has the potential to contribute to a cumulatively significant paleontological resources impact due to the potential loss of paleontological resources unique to the region. However, mitigation measures are included in this EIR to reduce potentially significant project impacts to paleontological resources during construction of the proposed project. Implementation of Mitigation Measure MM 4.7-2 requires paleontology sensitivity training for construction workers and Mitigation Measure MM 4.7-3 requires appropriate monitoring of construction activities for potential paleontological resources that may be encountered. Although project construction has the potential to disturb paleontological resources, the implementation of Mitigation Measure MM 4.7-4 would ensure the appropriate protocol is followed with regard to identifying and handling remains. Implementation of these mitigation measures would reduce potential impacts to paleontological resources to a less-than-significant level.

With implementation of Mitigation Measures MM 4.7-2 through MM 4.7-4, the project would not result in significant impacts to paleontological resources. Given this minimal impact and the requirement for similar mitigation for other projects in the Antelope Valley, cumulative impacts to paleontological resources would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.7-1 through MM 4.7-4 and MM 4.10-2.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-4 and MM 4.10-2, cumulative impacts would be less than significant.

Section 4.8
Greenhouse Gas Emissions

4.8.1 Introduction

This section of the EIR describes the affected environment and regulatory setting relating to greenhouse gases (GHGs) for the project. It also describes the impacts associated with GHGs that would result from implementation of the project, and, as necessary, mitigation measures that would reduce these impacts.

Information in this section is based primarily on the project's air quality technical report, Air Quality/Greenhouse Gas Assessment AVEP Solar (MBI, 2020) located in Appendix C-1 of this EIR. The impact assessment for the project is also based upon a review of relevant literature and technical reports that include, but are not limited to, information and guidelines by the California Air Resources Board (CARB), the United States Environmental Protection Agency (EPA), and the applicable provisions of CEQA.

4.8.2 Environmental Setting

GHGs and climate change are a cumulative global issue. CARB and the 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 emission reduction. CARB has divided California into regional air basins. The project is located within the western Antelope Valley, approximately 5.5 miles west of the unincorporated community of Rosamond, in the southeast potion of unincorporated Kern County which is under the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD), and is located in the Mojave Desert Air Basin (MDAB).

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 absorb 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 constant. 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 carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs), are listed below (USEPA, 2020).

- **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 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 of CO_2e (MMT CO_2e).

Greenhouse Gas Emissions Inventories

California produced approximately 424.1 gross $MMTCO_2e$ in 2017, 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 2017, accounting for approximately 41 percent of total GHG emissions in the State. This sector was followed by the industrial sector at approximately 24 percent and the electric power sector (including both in-state and out-of-state sources) at approximately 15 percent (CARB, 2019). 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 2017 are summarized in **Table 4.8-1**, *California Greenhouse Gas Emissions (million metric tons CO_2e)*, including the percentages by sector for 2017.[1]

[1] The most recent annual GHG emission inventory released by CARB is for year 2017, which was released August 12, 2019.

TABLE 4.8-1: CALIFORNIA GREENHOUSE GAS EMISSIONS (MILLION METRIC TONS CO_2E)

Emission Inventory Category	2009	2010	2011	2012	2013	2014	2015	2016	2017	% of 2017 tonnage
Transportation	170.20	165.13	161.76	161.31	160.91	162.53	166.18	168.76	169.86	40.05%
Electricity Generation (In State)	53.33	46.75	41.10	51.02	49.42	51.68	49.88	42.28	38.45	9.07%
Electricity Generation (Imports)	48.04	43.59	46.87	44.50	39.98	36.79	33.93	26.32	23.94	5.65%
Commercial	12.89	13.58	13.71	13.41	13.30	12.52	12.67	13.14	13.02	3.4%
Industrial	87.90	91.50	90.17	91.08	93.69	94.02	91.48	89.49	89.40	21.08%
Residential	29.32	30.06	30.51	28.21	29.02	23.75	24.17	25.27	26.00	6.30%
Agriculture	32.85	33.68	34.34	35.46	33.99	35.06	33.75	33.51	32.42	7.64%
High Global Warming Potential	12.29	13.52	14.53	15.51	16.75	17.73	18.60	19.26	19.99	4.71%
Recycling and Waste	8.27	8.37	8.47	8.49	8.52	8.59	8.73	8.81	8.89	2.10%
Total Gross Emissions	**457.3**	**448.5**	**443.6**	**451.2**	**447.7**	**444.7**	**441.4**	**429.0**	**424.1**	**100%**

SOURCE: CARB, 2019.

Climate Change

GHGs are gases in the atmosphere that trap heat. The major concern with GHGs is that increases in GHG concentrations in the atmosphere are causing global climate change, which is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to GHGs from human activities, most in the world-wide scientific community agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases (i.e., global warming).

According to CARB, the potential impacts in California due to global climate change may include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems. (CARB, 2018). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (IPCC, 2001):

- Higher maximum temperatures and more hot days over nearly all land areas
- Higher minimum temperatures, fewer cold days and frost days over nearly all land areas
- Reduced diurnal temperature range over most land areas

- Increase of heat index over land areas
- More-intense precipitation events

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, ocean acidification (including coral bleaching), impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood, the potential for substantial environmental, social, and economic consequences over the long-term may be great.

4.8.3 Regulatory Setting

Federal

Environmental Protection Agency

The principal air quality regulatory mechanism at the federal level is the 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 federal CAA. There are currently no federal regulations that set ambient air quality standards for GHGs.

EPA regulations applicable to the project include:

Federal Clean Air Act

The USEPA is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO_2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR® labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6). The Endangerment Finding was required before the USEPA could regulate GHG emissions under Section 202(a)(1) of the Clean Air Act. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks

On May 19, 2009, the federal government announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard jointly approved by the USEPA and the National Highway Traffic Safety Administration (NHTSA) applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy (CAFE) standards and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO_2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mph (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle. In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022–2025 (USEPA, 2018). In March 2020, the USEPA and NHTSA adopted the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule that would maintain the CAFE and CO_2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO_2 standards for model year 2020 are 43.7 mph and 204 grams per mile for passenger cars and 31.3 mph and 284 grams of CO_2 per mile for light trucks, projecting an overall industry average of 37 mph, as compared to 46.7 mph under the standards issued in 2012. The proposal, if adopted, would also exclude CO_2-equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020 (USEPA and NHTSA, 2018).

Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 FR 57106–57513). The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the USEPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 percent to 23 percent over the 2010 baselines (USEPA and NHTSA, 2011). In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans and all types of sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (USEPA and NHTSA, 2016).

40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule

This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 $MTCO_2e$ emissions per year (USEPA, 2011). Additionally, reporting of emissions is required for owners of SF6- and PFC-insulted equipment, when the total nameplate capacity of these insulating gases is above

17,280 pounds. The project would not be expected to trigger GHG reporting according to the rule; however, GHG emissions of the project are quantified in this EIR.

40 CFR Part 52. Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule

USEPA mandated to apply Prevention of Significant Deterioration (PSD) requirements to facilities whose stationary source CO_2e emissions exceed 75,000 tons per year (USEPA, 2010). The project would not be expected to trigger PSD permitting as required by this regulation; however, GHG emissions of the project are quantified in this EIR.

Fuel Efficiency Standards for Construction Equipment

The federal government sets fuel efficiency standards for non-road diesel engines that are used in construction equipment. The regulations, contained in 40 CRF Parts 1039, 1065, and 1068, include multiple tiers of emission standards. Most recently, the USEPA adopted a comprehensive national program to reduce emissions from non-road diesel engines by integrating engine and fuel controls as a system to gain the greatest reductions. To meet these Tier 4 emission standards, engine manufacturers will produce new engines with advanced control technologies (USEPA, 2004).

State

Executive Order S-1-07

Executive Order S-1-07 recognizes that the main source of GHG emissions in California is from the transportation sector, and establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. As a result of Executive Order S-1-07, CARB approved a proposed regulation to implement the Low Carbon Fuel Standard (LCFS) to reduce GHG emissions from the transportation sector in California by approximately 16 $MMTCO_2e$ by 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that establishes performance standards that fuel producers and importers must meet each year beginning in 2011.

Executive Orders S-3-05 and B-30-15

Executive Order S-3-05 sets target dates to reduce statewide GHG emissions to historical levels, as follows:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 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 Climate Change Scoping Plan).

Assembly Bill 32 and Senate Bill 32

In 2006, the California State Legislature adopted AB 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO_2, CH4, N_2O, HFCs, PFCs, and SF6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing State actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

In 2016, Senate Bill (SB) 32 and its companion bill, AB 197, amends HSC Division 25.5 and establishes a GHG reduction target of 40 percent below 1990 levels by 2030, and includes provisions to ensure the benefits of State climate policies reach into disadvantaged communities.

Climate Change Scoping Plan

AB 32 required preparing a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (HSC Section 38561(h)). CARB developed a Climate Change Scoping Plan that contains strategies to achieve the 2020 emissions cap (CARB, 2008). In 2008, the initial Climate Change Scoping Plan contained a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives. In 2014, the First Update to the Scoping Plan upon the initial Climate Change Scoping Plan with new strategies and recommendations (CARB, 2014b). CARB revised the projected statewide 2020 emissions estimate of 509.4 $MMTCO_2e$ using the GWP values from the IPCC AR4 509.4 $MMTCO_2e$ (CARB, 2014b). Therefore, the emission reductions necessary to achieve the 2020 emissions target of 431 $MMTCO_2e$ would be 78.4 $MMTCO_2e$, or a reduction of GHG emissions by approximately 15.4 percent. In 2017, the 2017 Scoping Plan established a 2030 GHG reduction target of 40 percent emissions reductions below 1990 levels (CARB, 2017a).

Senate Bill 97

SB 97 was enacted requiring the Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions, or the effects related to releases of GHG emissions. OPR submitted proposed amendments to the Natural Resources Agency in accordance with SB 97 regarding analysis and mitigation of GHG emissions. As directed by SB 97, the Natural Resources Agency adopted Amendments to the *CEQA Guidelines* for GHG emissions, which became effective in 2010.

Senate Bill 375

SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. CARB adopted the vehicular GHG emissions reduction targets, in consultation with the metropolitan planning organizations (MPOs), which require a 7 to 8 percent reduction by 2020 and a 13 to

16 percent reduction by 2035, for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs, such as the Kern Council of Governments (KCOG), will work with local jurisdictions in the development of sustainable community strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. KCOG's reduction target for per capita vehicular emissions is 5 percent by 2020 and 10 percent by 2035 (CARB, 2010).

KCOG adopted the 2018 Regional Transportation Plan (RTP), which includes a Sustainable Community Strategies (SCS) component in accordance with SB 375. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County.

California Green Building Standard Code

The State of California adopted the 2010 CALGreen Code, which became effective in January 2011. Building off of the initial 2008 California Green Building Code, the 2010 CALGreen Code represents a more stringent building code that requires, at a minimum, that new buildings and renovations in California meet certain sustainability and ecological standards. The 2010 CALGreen Code has mandatory Green Building provisions for all new residential buildings that are three stories or fewer (including hotels and motels) and all new non-residential buildings of any size that are not additions to existing buildings.

The California Building Standards Commission adopted the 2013 California Building Standards Code that also included the 2013 CALGreen Code, which became effective on January 1, 2014. The mandatory provisions of the code are anticipated to reduce GHG emissions by 3 $MMTCO_2e$ by 2020, reduce water use by 20 percent or more, and divert 50 percent of construction waste from landfills. Additionally, the California Building Code includes a requirement for a 20 percent reduction in indoor potable water usage. The 2013 California Energy Code (Title 24, Part 6), which is also part of the CALGreen Code (Title 24, Part 11, Chapter 5.2), became effective on July 1, 2014. The 2016 CALGreen Code became effective on January 1, 2017. The updated code addresses clean air vehicles and requirements for electric vehicle charging infrastructure. The CALGreen Code was most recently updated in 2019 to include new mandatory measures for residential as well as nonresidential uses; the new measures took effect on January 1, 2020.

California Renewables Portfolio Standard

First established in 2002 under SB 1078, California's Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030 (California Energy Commission, 2019). In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The California Public Utilities Commission (CPUC) and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance, (2) reviewing and approving each investor-owned utility's renewable energy procurement plan, (3) reviewing contracts for RPS-eligible energy, and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy.

Senate Bill 100

SB 100 (De León, also known as the "California Renewables Portfolio Standard Program: emissions of greenhouse gases") was approved by the California legislature and signed by Governor Brown in September 2018. The bill increases RPS in 2030 from 50 percent to 60 percent and establishes a goal of 100 percent RPS by 2045.

Senate Bill 1368

SB 1368 requires the CPUC to establish a baseload generation standard for publicly owned or leased facilities that generate electricity at a GHG Emissions Performance Standard (EPS) of 1,100 pounds of CO_2e per megawatt-hour. SB 1368 also requires the posting of notices of public deliberations by publicly owned companies on the CPUC website and establishes a process to determine compliance with the EPS.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combined the control of smog- and soot- causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB, 2017b). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the USEPA and NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025. The Zero Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufactures to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in 2018 to 2025 model years.

California Air Pollution Control Officers Association White Paper

The California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" (*CEQA and Climate Change*—an authoritative report issued by any organization) on evaluating GHG emissions under CEQA (California Air Pollution Control Officers Association, 2008). The strategies provided in that document are guidelines only and have not been adopted by any regulatory agency. The white paper serves as a resource to assist lead agencies in evaluating GHGs during review of environmental information documents. The methodologies used in this GHG analysis are consistent with the CAPCOA guidelines.

Regional

2018 Regional Transportation Plan/Sustainable Communities Strategy

The KCOG is the regional planning agency for Kern County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. KCOG serves as the federally designated metropolitan planning organization for Kern County. With respect to air quality planning and other regional issues, KCOG has prepared the 2018 Regional Comprehensive Plan for the

region (Kern COG, 2018). The 2018 RCP is a long-term (24 year) general plan for the region's transportation network, and encompasses projects for all types of travel, including aviation and freight movement. The plan assesses environmental impacts of proposed projects.

The Kern COG 2018 RTP includes an SCS component in accordance with SB 375, the Sustainable Communities and Climate Protection Act of 2008. The Kern COG board of directors adopted its first SCS on June 19, 2014, and made a determination that, if implemented, the SCS would achieve the per capita passenger vehicle GHG emissions targets established by the board of directors. The 2020 target is a 5 percent per capita reduction and the 2035 target is a 10 percent per capita reduction from the 2005 base year.

The SCS strives to reduce air emissions from passenger vehicle and light-duty truck travel by better coordinating transportation expenditures with forecasted development patterns and, if feasible, help meet CARB GHG targets for the region. As explained in the Kern COG 2018 RTP EIR, the key purpose of SB 375 and the Kern COG SCS is to reduce per capita emissions originating from passenger vehicles and light-duty trucks. Accordingly, the 2018 RTP:

- Describes sources of emissions in the Kern region, 2020 and 2035 emission reduction targets established by CARB for the San Joaquin Valley, and modeling techniques used to estimate and forecast emissions
- Identifies statewide strategies to reduce transportation-related emissions and their anticipated effect within the Kern region
- Identifies regional strategies that complement the SCS by reducing emissions in other sectors (e.g., energy consumption)
- Quantifies the effect of policies and programs in the RTP that reduce transportation-related emissions in the region and
- Compares the emissions reductions anticipated with implementation of the SCS with the regional targets (Kern COG 2018).

Local

Kern County General Plan

The Land Use, Open Space, and Conservation Element of the Kern County General Plan (Kern County, 2009) provides goals, policies, and implementation measures applicable to air quality, and as related to the project, would also reduce project GHG emissions. These goals, policies, and implementation measures are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development such as the project. Therefore, they are not listed below.

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

Air Quality

Policy

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: Discretionary projects may use one or more of the following to reduce air quality effects:

1. Pave dirt roads within the development.
2. Pave outside storage areas.
3. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
4. Use of alternative fuel fleet vehicles or hybrid vehicles.
5. Use of emission control devices on diesel equipment.
6. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
7. Provide bicycle lockers and shower facilities on site
8. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
9. The use and development of park and ride facilities in outlying areas.
10. Other strategies that may be recommended by the local Air Pollution Control Districts.

Chapter 5: Energy Element

Solar Energy Development

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

In 2009, the Kern County Board of Supervisors approved the proposed list of Energy, Efficiency, and Conservation projects for which the County will request funding under the provisions of the American Recovery and Reinvestment Act of 2009. The Kern County Planning and Natural Resources Department has requested an allocation for the preparation of a Climate Change Action Plan (CCAP) for the County General Plan. California's Climate Change Scoping Plan calls for local governments to reduce GHG emissions through the adoption of local programs as an important strategy to reduce community scale GHG emissions. Project conformance with an adopted CCAP would ensure the goal of AB 32 can be attained with the project.

Willow Springs Specific Plan

The project site is located within the Willow Springs Specific Plan area. The Willow Springs Specific Plan was adopted in 1992 (most recently revised on April 1, 2008) and includes policies and implementation measures to minimize air quality impacts, which would also reduce project GHG emissions. The following summarizes the policies and implementations measures from the Willow Springs Specific Plan that are applicable to the project.

Air Quality

Goal

Goal: Imposition of appropriate mitigation measures to reduce where practical to do so, the effect short-term and long-term projects have on the areas which involve grading activities, erosion controls, revegetation of disturbed sites, and provisions to introduce into the plan area a competitive job market to reduce travel times.

Implementation Measures

Measure 3: Construction equipment shall be fitted with the most modern emission control devices and be kept in proper tune. Motors out of proper tune can result in emissions that vastly exceed recommended standards.

Measure 7: All phases of the Willow Springs Specific Plan Update project shall comply with applicable rules and regulations of the Kern County Air Pollution Control District.

Eastern Kern Air Pollution Control District

In 2012, EKAPCD adopted an addendum to its *CEQA Guidelines* to address GHG impacts, including quantitative thresholds for determining significance for GHG emissions for new stationary sources where EKAPCD serves as the lead CEQA review agency. A project is considered to have a significant project or cumulative considerable impact if it generates 25,000 tons or more of 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 business as usual (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 analysis presented within this section is based on both qualitative and quantitative approaches for determining GHG impacts associated with construction, operation, and maintenance of the project. The findings in the Air Quality/Greenhouse Gas Assessment prepared for the proposed project (located in Appendix C-1 of this EIR), was used to assess the project's impacts related to GHG emissions.

Construction Emissions

Based on information provided by the project applicant, construction assumptions for the project have been quantified using conservative assumptions of a reasonably worst-case air quality scenario. Construction emissions have been quantified for each individual Facility using an Excel spreadsheet populated by the project applicant and then combined to assess emissions for the project as a whole. The Excel spreadsheet model has been deemed acceptable by the EKAPCD. The emissions calculations used CARB off-road emissions factors for equipment exhaust, CARB EMission FACtor (EMFAC) 2017 emission factors for on-road vehicle exhaust, and USEPA AP-42 emissions factors for earthwork and trenching fugitive dust emissions.

Construction emissions consist of vehicle and equipment exhaust and fugitive dust. Construction of the project is anticipated to take 12 to 24 months; however, for the purposes of this analysis, it was assumed that construction activities would be completed within 12 months. Air emissions calculations were performed for both before and after the incorporation of Mitigation Measures MM 4.3-1 to MM 4.3-2. These mitigation measures include those typically required by Kern County for NO_X (compliance with applicable CARB and EKAPCD rules) and PM_{10} (watering program for dust control). See the Air Quality/Greenhouse Gas Assessment (Appendix C-1 of this EIR) for a complete list of construction

assumptions, including equipment, and vehicles. Details regarding the methods and activity assumptions by source type are provided below.

- **Off-Road Equipment:** For the purpose of this project, off-road equipment is defined as equipment powered by an USEPA defined non-road engine. The off-road equipment exhaust emissions were calculated with emission factors from the California Emissions Estimator Model (CalEEMod). The analysis with these CalEEMod emission factors provided the total peak emissions that would occur if all pieces of equipment were used on the same day. This is a conservative estimate and, therefore, represents a worst-case scenario. It is not likely that all equipment would be working at the same time, and, therefore, emissions would be lower than this worst-case scenario.
- **On-Road Vehicles and Trucks:** EMFAC2017 emissions factors were applied to the estimated vehicle miles traveled for the project. Construction of the project would generate emissions associated with the transport of machinery and supplies to and from the site, emissions from trucks transporting materials and water to and from the site, and emissions associated with worker trips. Additionally, the analysis includes emissions from delivering the construction materials and PV modules (panels) from the Port of Long Beach to the project site (a distance of approximately 80 miles).
- **Electricity Consumption:** GHG emissions generated by electricity related to water demand during construction were quantified using activity data (e.g., megawatt-hours [MWh]) provided by the project applicant and emission factors based on the California Air Pollution Control Officers Association (CAPCOA, 2010). Based on information provided by the project applicant, total water use during construction would be approximately 1,500 acre-feet (750 acre-feet per site).
- **Joshua Tree Removal and Mulching:** The removal and mulching of Joshua Trees on site would result in GHG emissions impacts related to reduced annual carbon sequestration, and the one-time release of carbon stored in the trees if mulched.

Operational Emissions

Long-term operational emissions associated with the proposed project were also calculated using EMFAC2017 and CalEEMod, version 2016.3.2. Long-term emissions result from operational mobile sources from new employees, cleaning of the solar panels, Energy Storage System (ESS) facilities and emergency backup generators. All assumptions and calculations are provided in Appendix C-1 of this EIR.

- **Vehicle and Truck Emissions:** Once placed into service, the project would be operated by up to 20 full-time equivalent (FTE) personnel. The employees would monitor and report the performance of the project and conduct preventative and corrective maintenance. It should be noted that preventative maintenance kits and certain critical spares would be typically stored onsite, while all other components would be readily available from a remote warehouse facility. As such, vehicle trips associated with project operation and maintenance would be minimal. Additionally, mobile source emissions for water deliveries and panel washing for the project have been calculated based on a conservative estimate of 4,800 miles traveled per year for trucks.
- **ESS Facilities:** The project may have up to two ESS's facilities, one at each separate Facility. The ESS systems would be connected to the power grid but are assumed to be 50 percent dependent on the renewable energy produced by the individual solar facilities. The ESS facilities would not have any additional mobile trips, solid waste, or water usage attributed to them. The ESS operation emissions were calculated using CalEEMod.
- **Emergency Backup Generator Emissions:** The project may have up to two diesel emergency backup generators (Backup Generator), one for each separate Facility. These emergency Backup

Generators would follow compliance with EKAPCD and CARB rules and regulations. It is assumed that these two emergency backup generators would be 100 horsepower each and would each run for 12 hours per year. The operational emissions of these emergency generators were calculated using CalEEMod.

- **Energy Generation:** The proposed solar facility would generate renewable energy with no associated GHG emissions. Therefore, operation of the project would result in displaced GHG emissions due to the gradual switch from non-renewable GHG-generating energy to renewable energy. Energy displacement and the subsequent emissions displacement from the proposed solar facility were calculated using EPA Emissions & Generation Resource Integrated Database (eGrid) (USEPA, 2018a), Argonne National Laboratory *Updating electric grid emissions factors* (Argonne National Laboratory, 2018), GHG energy emissions factors for Pacific Gas and Electric Company from CalEEMod (Version 2016.3.2), and total electricity generation per year provided by the project applicant. Total annual electricity generation was assumed to be 763,000 MWh/year (or 22,890,000 MWh over the life of the project).

Decommissioning Emissions

At such time as the project is decommissioned, equipment operation and site restoration activities would result in emissions of GHGs. Given the assumption that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to activities associated with construction of the project. It should be noted that this does not take into account any future improvement in technology or subsequent reductions in air emissions. Project decommissioning is projected to be shorter in duration than construction and take four to eight months to complete (however, for the purposes of this analysis, it was assumed that decommissioning activities would be completed within 4 months, instead of 12 months for construction). Therefore, decommissioning is assumed to be one-third of the predicted construction emissions.

Thresholds of Significance

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

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

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The adopted *CEQA Guidelines* provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Quantitative significance thresholds for this impact area have not been adopted by the State of California.

Kern County has not developed a quantified threshold of significance for GHG emissions, but a project found to contribute to a net decrease in GHG emissions and found to be consistent with the adopted implementation of the CARB Climate Change Scoping Plan is presumed to have less-than-significant GHG impacts.

In March 2012, EKAPCD adopted an addendum to their *CEQA Guidelines* to address GHG impacts, including quantitative thresholds for determining significance of GHG emissions when EKAPCD is the CEQA lead agency. In these circumstances, a project is considered to have a significant impact or cumulatively considerable impact if it exceeds the following criteria:

- Generate 25,000 MTs or more of CO_2e 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.

Pursuant to the CEQA thresholds, impacts were evaluated based on whether the project would be consistent with the State's applicable GHG reduction goals, plans, policies, and regulatory requirements. Specifically, those plans and policies established in accordance with AB 32 and the State's RPS program as well as other federal, state, and local policies.

Project Impacts

Impact 4.8-1: The project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

The project would directly generate GHG emissions during construction, routine operational and maintenance activities, and during decommissioning. Three 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 decommissioning, from vehicles used during routine operational activities, as well as indirect sources such as water demand and energy consumption. The estimated GHG emissions from construction, operational, and decommissioning activities associated with the 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)
Total Construction Emissions	7,877
Total Decommissioning Emissions	2,6261
Total Construction and Decommissioning Emissions	**10,502**
Annualized Emissions (30 year)	350
Vehicle Emissions[a]	220
Water Usage[b]	33
Backup Generator	1
ESS Facility	144
Total Operational Emissions	398
Total Construction, Decommissioning & Operational Emissions	**748**
EKCAPCD Threshold	25,000
Exceed Threshold?	No
Total Potential Displaced Emissions (over anticipated 30-year project life)[c]	-222,851

NOTES

Refer to Appendix C-1 for all assumptions and calculations.

Totals may be slightly off due to rounding.

[a] Vehicle emissions are based on 1,200 vehicle miles traveled per day for employees associated with operations and maintenance activities. Maintenance also includes 4,800 annual vehicle miles traveled associated with water trucks for panel washing.

[b] Operational water usage emissions are based on an average usage of 20 acre-feet per year. GHG Emissions based on factors from the California Air Pollution Control Officers Association, Quantifying Greenhouse Gas Mitigation Measures, September 2010.

[c] Displaced GHG emissions are based on the U.S. EPA, 2019. Greenhouse Gas Equivalencies Calculator.

SOURCE: MBI, 2020, First Solar, 2020

Direct Emission Sources

Construction Emissions. As shown in **Table 4.8-2**, *Estimated Project Greenhouse Gas Emissions*, construction of the proposed project would result in direct emissions of 7,877 $MTCO_2e$. Construction GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years), then added to the operational emissions.

Decommissioning Emissions. As shown in **Table 4.8-2**, *Estimated Project Greenhouse Gas Emissions*, decommissioning of the proposed project would result in the direct emissions of 2,626 $MTCO_2e$. Decommissioning GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years), then added to the operational emissions.

Vehicle Emissions. The project anticipates a total of 1,200 vehicle miles traveled per day for the anticipated 20 full time equivalent employee positions during the operational phase. In addition, another 4,800 annual vehicle miles traveled per year are anticipated with water trucks for panel washing. As shown in

Table 4.8-2, *Estimated Project Greenhouse Gas Emissions*, total mobile source emissions anticipated with the operation and maintenance of the project is approximately 220 $MTCO_2e$.

Indirect Emission Sources

Water Demand. The project would use up to 20 acre-feet per year for long-term operations. The analysis conservatively assumed that all water would be imported from State Water Project sources. Energy usage factors associated with water import were based on data from the California Energy Commission (CEC), while emissions associated with energy usage are based on the California Air Pollution Control Officers Association (CAPCOA) document *Quantifying Greenhouse Gas Mitigation Measures* (dated September 2010).

Energy Consumption. The project would require minimal energy for security and monitoring systems during non-daylight hours and for the ESS facilities; however, this amount would be negligible. The project would introduce a non-fossil-fuel-based energy source, which would have the indirect effect of displacing emissions otherwise occurring at natural gas and coal-fired power plants. Additionally, the project could generate GHG-free electricity that could offset approximately 222,851 $MTCO_2e$ and other emissions that would have resulted from producing an equivalent amount of electricity from fossil fuel-fired electric generators. The first-year offset total would be approximately 28 times the total amount of construction-related GHGs.

Total GHG Emissions

As shown in **Table 4.8-2**, *Estimated Project Greenhouse Gas Emissions*, the project's combined construction, operational, and decommissioning emissions would be 748 $MTCO_2e$, which is under the 25,000 $MTCO_2e$ threshold from EKAPCD. Although the displaced emissions are not taken into account for the threshold of significance, it is important to note that the proposed project would generate clean renewable energy that could offset a net of approximately 222,851 $MTCO_2e$ per year that would have resulted from producing an equivalent amount of electricity from a non-renewable energy source. Furthermore, the proposed project would also contribute to achieving the state's Renewables Portfolio Standard goals and would not conflict with the state goals to reduce GHG emissions.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.8-2: The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas.

As discussed above, impacts were evaluated based on whether the project would be consistent with the State's applicable GHG reduction goals, plans, policies, and regulatory requirements as well as other federal, state, and local policies, as provided in the following analyses.

CARB Climate Change Scoping Plan

The project would comply with the strategies recommended by the State of California, the USEPA, and the Climate Change Scoping Plan, as shown in **Table 4.8-3**, *California Greenhouse Gas Emission Reduction Strategies*. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the 100 percent RPS by 2045 as well as the other measures listed in **Table 4.8-4**, *Applicable Scoping Plan Strategies for Project*. These measures would primarily be those actions related to energy efficiency. A discussion of the consistency of the project with these measures is provided below. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the project is reasonably expected to displace region-wide and Statewide emissions of GHGs over the expected life of the project.

TABLE 4.8-3: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
Vehicle Climate Change Standards: AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in September 2004.	These are CARB enforced standards; vehicles that access the project and are required to comply with the standards would comply with these strategies.
Other Light Duty Vehicle Technology: New standards would be adopted to phase in beginning in the 2017 model.	
Heavy-Duty Vehicle Emission Reduction Measures: Increased efficiency in the design of heavy-duty vehicles and an education program for the heavy-duty vehicle sector.	
Diesel Anti-Idling: In July 2004, CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	Project would be subject to State law.
Hydrofluorocarbon Reduction: (1) Ban retail sale of HFC in small cans; (2) Require that only low global warming potential refrigerants be used in new vehicular systems; (3) Adopt specifications for new commercial refrigeration; (4) Add refrigerant leak tightness to the pass criteria for vehicular Inspection and Maintenance programs; (5) Enforce federal ban on releasing HFCs.	This measure applies to consumer products. When CARB adopts regulations for these reduction measures, any products that the regulations apply to would comply with the measures.
Transportation Refrigeration Units (TRU), Off-Road Electrification, Port Electrification: Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.	Not applicable
Manure Management: Reduction of volatile organic compounds from confined animal facilities through implementation of control options.	Not applicable
Alternative Fuels – Biodiesel Blends: CARB would develop regulations to require the use of one to four percent biodiesel displacement of California diesel fuel.	Not applicable
Alternative Fuels – Ethanol: Increased use of ethanol fuel.	Not applicable
Achieve 50 percent Statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a Statewide basis. Therefore, a two percent additional reduction is needed.	The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended.

TABLE 4.8-3: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
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.
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

TABLE 4.8-3: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
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 megawatts (MW) by 2017 on homes and businesses; increased use of solar thermal systems to offset the increasing demand for natural gas; use of advanced metering in solar applications; and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.	The project would result in an electric power generating capacity of approximately 250 MW. Therefore, the project would help support and not conflict with this strategy.

TABLE 4.8-4: APPLICABLE SCOPING PLAN STRATEGIES FOR PROJECT

ID #	Sector	Strategy Name
T-1	Transportation	Advanced Clean Cars
T-2	Transportation	Low Carbon Fuel Standard
E-3	Electricity and Natural Gas	Renewables Portfolio Standard
E-4	Electricity and Natural Gas	Million Solar Roofs
W-1	Water	Water Use Efficiency
CR-1	Electricity and Natural Gas	Energy Efficiency
H-6	High GWP Gases	SF_6 Leak Reduction Gas Insulated Switchgear

SOURCE: CARB, 2014c.

Action T-1 relates to the Advanced Clean Cars program, in which the project's employees would purchase vehicles in compliance with the CARB vehicle standards that are in effect at the time of the vehicle purchase. In addition, as it related to Low Carbon Fuel Standards, under Action T-2, motor vehicles driven by the project's employees would use compliant fuels.

Action E-3 relates to renewable energy and the RPS, which is intended to increase California's renewable energy production to 20 percent by 2010, to 33 percent by 2020 and up to 100 percent by 2045, pursuant to SB 100. The CPUC estimates that the utilities are well-positioned to meet the 33 percent requirement by 2020 (California Energy Commission, 2019). Utilities would also be required to meet the updated RPS goals of 60 percent by 2030, and 100 percent by 2045, pursuant to SB 100. A key prerequisite to reaching a target of 100 percent RPS would be to provide sufficient electric transmission lines to renewable resource zones and system changes to allow integration of large quantities of intermittent wind and solar generation. The project proposes a solar array with an electric power generating capacity of approximately 250 MW. Therefore, the project would be consistent with Action E-3.

Action E-4 aims to install 3,000 MW of solar energy capacity under the Million Solar Roofs Program. This measure would offset electricity from the grid, thereby reducing GHG emissions. By requiring greater

energy efficiency for projects that seek solar incentives, the State would be able to reduce both electricity and natural gas needs and their associated GHG emissions. The project would result in an electric power generating capacity of approximately 250 MW. Therefore, the project would not conflict with Action E-4.

Action W-1 relates to water use efficiency. The State is currently implementing targeted water use efficiency programs as part of an integrated water management effort. Consistent with this measure, the project will utilize water panel washing, equipment washing, non-sanitary uses, and other miscellaneous uses, such as landscaping obtained on site from existing wells or by truck. The water using during operation of the project would be used in an efficient manner to reduce impacts to local water resources.

Action CR-1 relates to energy efficiency in commercial and residential buildings. Also, Action CR-1 notes the need for more aggressive utility programs to achieve long-term energy savings. The project would result in the development of PV solar energy generating facilities that would provide renewable energy to California Investor-Owned utilities, which in turn would be used by commercial and residential buildings in the State. Therefore, the project is consistent with and would not obstruct Action CR-1.

Action H-6 relates to 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 project would comply with any and all applicable regulatory requirements for any SF_6 containing switchgear.

KCOG's 2018 RTP

The 2018 RTP incorporates local land use projections and circulation networks in city and county general plans. The 2018 RTP is not directly applicable to the project because the underlying purpose of the 2018 RTP is to provide direction and guidance by making the best transportation and land use choices for future development. Nevertheless, the project would not conflict with the goals and policies of the 2018 RTP. In addition, the project would not impact local transportation or land use during operation.

Other Federal/State/Local Policies

Table 4.8-5, *Project Consistency with an Applicable Plan, Policy, or Regulation for GHG Emissions*, evaluates project consistency with other applicable federal, State and local policies regarding GHG emissions. As shown in the table below, the project would fall below the annual emission triggers for compliance with federal regulations; therefore, federal regulations would not be applicable to the project. As a renewable energy project, the project would be exempt from State annual GHG reporting requirements and would be considered consistent with California's Emission Performance Standard and RPS requirements (described in Section 4.8.3, *Regulatory Setting*).

TABLE 4.8-5: PROJECT CONSISTENCY WITH AN APPLICABLE PLAN, POLICY, OR REGULATION FOR GHG EMISSIONS

Adopted Plan, Policy, or Regulation	Consistency Determination	Project Consistency
Federal		
40 CFR Part 98. Mandatory Reporting of Greenhouse Gases Rule.	Not applicable	The project would have direct CO_2e operating emissions that are 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 75,000 ton/year rule trigger.
State		
SB 1368. EPS Standard.	Consistent	The project, as a renewable energy generation facility, is determined by rule to comply with the GHG Emission Performance Standard requirements of SB 1368.
SB 351. 50% RPS Standard.	Indirectly consistent	This regulation is applicable to utilities, not generating facilities, but the energy from this project would help enable the utility buying the project's generation to comply with this legislation.
SB 100. 60% Standard by 2030 and 100% by 2045	Indirectly consistent	This regulation is applicable to utilities, not generating facilities, but the energy from this project would help enable the utility buying the project's generation to comply with this legislation.
AB 32. Annual GHG Emissions Reporting	Not applicable	The project, as a solar energy generation project, is exempt from the mandatory GHG emission reporting requirements for electricity generating facilities as currently required by the CARB for compliance with the California Global Warming Solutions Act of 2006 (AB 32 Núñez, Statutes of 2006, Chapter 488, Health and Safety Code Sections 38500 et seq.).
Local		
Kern County General Plan – Air Quality Element Policies Goals and Implementation Measures	Consistent	Air Quality Mitigation Measures would ensure that the project is consistent with the Kern County General Plan Air Quality Element Policies, Goals, and Implementation Measures that will indirectly reduce GHG emissions by reducing fossil fuel combustion.
Willow Springs Specific Plan	Consistent	Air Quality Mitigation Measures would ensure that the project is consistent with the Willow Springs Specific Plan Air Quality Element Policies, Goals, and Implementation Measures that will indirectly reduce GHG emissions by reducing fossil fuel combustion.

Overall, because the main objectives of the project are to assist California Investor-Owned utilities in meeting their obligations under California's RPS Program and assist California in meeting the GHG emissions reduction goal of 1990 level GHG emissions by 2020 as required by AB 32 and the future reduction goal of 40 percent below 1990 levels by 2030, the project would be compliant with the applicable

recommended actions of the CARB Climate Change Scoping Plan as well as applicable federal, State, and local policies. Specifically, the project would assist the State and regulated utility providers to generate a greater portion of energy from renewable sources consistent with the 2030 and 2045 RPS, including the targets established under SB 100. Therefore, this impact would be less than significant.

Consideration of Mitigation Measures

The Office of the California Attorney General maintains a website with a list of CEQA mitigation measures for global climate change impacts. The Attorney General has listed some examples of types of mitigation measures that local agencies may consider to offset or reduce global climate change impacts from a project. The Attorney General assures that the presented lists are examples and not intended to be exhaustive, but instead provide measures and policies that could be undertaken. Moreover, the measures cited may not be appropriate for every project, so the Attorney General suggests that the lead agency should use its own informed judgment in deciding which measures it would analyze, and which measures it would require, for a given project.

The Attorney General suggests measures that could be undertaken or funded by a diverse range of projects, related to energy efficiency; renewable energy; water conservation and efficiency; solid waste measures; land use measures; transportation and motor vehicles; and carbon offsets. However, most of the suggested measures from the Attorney General's office would not be applicable to the project, since they are more appropriate and applicable measures to reduce long-term operational GHG emissions, and the majority of emission sources from the project are short-term in nature. Long-term operational emissions would be minimal and more than offset by the renewable energy production.

The impacts of GHG emissions on climate change are indirect, climate change is a worldwide phenomenon, and project-level emissions cannot be correlated with specific impacts based on currently available science. However, based on the analysis above, the project would be consistent with California's strategies to reduce greenhouse gas emissions to the levels required by AB 32, as well as state GHG emission reductions post-2020. As a renewable energy project, the project would contribute to achieving the mandated emission reduction targets established by AB 32. Additionally, the project would comply with any applicable forthcoming regulations or requirements adopted under AB 32 or imposed by the State or federal government. Therefore, considering the project's minimal annual emissions and anticipated reduction in overall GHG emissions, the project is not expected to significantly contribute to global warming or climate change.

Furthermore, as the project would have an electric power generating capacity of approximately 250 MW, the project would be consistent with the Attorney General's recommended measures to reduce GHG emissions. Specifically, the project complies with the Attorney General's Recommended Measure to "Install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning." Therefore, the project would be compliant with the Attorney General's Recommended Measure regarding renewable energy. Because the project is below regional regulatory thresholds and would result in a reduction of GHG emissions, no mitigation measures would be required.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Emissions of GHGs and their contribution to global climate change are considered a cumulative impact by definition. Therefore, the geographic extent of the project's cumulative area of impact would be worldwide.

The adopted *CEQA Guidelines* provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Quantitative significance thresholds for this impact area have not been adopted by the State of California. In addition, Kern County has not adopted quantitative thresholds for determining significance of GHG emissions at the time of this writing. However, EKAPCD has recently adopted an addendum to its *CEQA Guidelines* titled: "Addressing GHG Emission Impacts for Stationary Source Projects When Serving as the Lead CEQA Agency." This addendum is the policy that EKAPCD will use when it is the lead agency for CEQA to determine the project-specific and cumulative significance of GHG emissions from new and modified stationary source (industrial) projects. Under this policy, a project is considered to have a cumulatively considerable impact if it generates 25,000 metric tons or more of CO_2e per year.

Total GHG emissions of 748 $MTCO_2e$ for the project are shown in **Table 4.8-2**, *Estimated Project Greenhouse Gas Emissions*. In addition to these project GHG emissions, other cumulative projects, identified in **Table 3-4**, *Cumulative Projects List*, in Chapter 3, *Project Description*, largely consist of utility-scale alternative power generation (i.e., solar and wind) facilities. The nature of these projects is such that, like the project, they would be consistent with the strategies of the Climate Change Scoping Plan. In order to meet the AB 32 GHG emissions reduction mandate, the 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. As previously discussed, the RPS target was updated in September 2018 under SB 100 to 60 percent renewable by 2030 and 100 percent carbon-free by 2045. The project and other similar projects are essential to achieving the RPS.

The main contribution of GHG emissions from the project would be from construction equipment usage during the construction phase and motor vehicles trips by employees and maintenance vehicles during project operations. Transportation sources account for 40 percent of California's total GHG emissions (CARB, 2019a). The project's emissions would, therefore, contribute to the increase in emissions in the transportation sector. Construction emissions would be finite and temporary and would cease at the end of construction activities.

Although the project would result in a contribution to cumulative GHG emissions in California, operation of the project could offset emissions from the electricity generation sector estimated at 222,851 $MTCO_2e$, annually; over its 30year anticipated lifespan (refer to Table 4.8-2). Therefore, the total GHG construction emissions that would be associated with the project would likely be offset by approximately one year of operations. Overall, the 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 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 construction and operational GHG emissions would be offset by renewable power generation and no mitigation is proposed, any other feasible reductions would be accomplished through CARB regulations adopted pursuant to AB 32 and SB 32. Cumulative impacts of the project on global climate change would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Cumulative impacts would be less than significant.

Section 4.9
Hazards and Hazardous Materials

4.9.1 Introduction

This section of EIR describes the affected environment and regulatory setting for hazards and hazardous materials in the study area. It also describes the project's potential impacts on residences and other sensitive receptors that could be exposed to these hazards (other than geologic hazards; see Section 4.7, *Geology and Soils*, of this EIR for discussion on geologic hazards) and presents mitigation measures where applicable. Information in this section is based primarily on the *Phase 1 Environmental Site Assessment – Rabbitbrush Parcels* and the *Phase 1 Environmental Site Assessment – Chaparral Parcels*, completed for the two solar facility sites, located in Appendices J-1 through J-11 of this EIR, and publicly available databases including the Department of Toxic Substances Control's Envirostor and State Water Resources Control Board's Geotracker.

4.9.2 Environmental Setting

This section discusses the existing conditions related to hazards and hazardous materials in the project area, and describes the environmental setting for hazardous materials and waste, airports, electromagnetic fields (EMFs), and wildfire hazards. Residences and other sensitive receptors such as schools are also described as their proximate location to the project site affects their exposure to the potential hazards described below. A description of the project site relative to hazards and hazardous materials can also be found below.

As described in Chapter 3, *Project Description*, the project includes the development of two solar facilities (Chaparral Solar Facility and Rabbitbrush Solar Facility) and associated infrastructure necessary to generate up to a combined total of 250 megawatts (MW) of renewable electrical energy including associated energy storage on 1,406 acres of primarily privately owned land. Each facility would include solar panels, gen-tie lines, electrical collection system, battery storage, substation, and an O&M building. The energy would be ultimately transferred to the electrical grid via the Southern California Edison (SCE) Whirlwind Substation.

Existing Setting

The proposed project would consist of two separate solar facility sites (i.e., Rabbitbrush, and Chaparral Solar) that cover a total of 1,406 acres of private land in southeastern Kern County. Major components of each facility would include photovoltaic modules mounted on fixed-tilt or horizontal tracker systems, an onsite electrical collection system, an Energy Storage System (ESS), one microwave or other telecommunications tower, two meteorological stations, meteorological towers (if tracker technology is utilized), private access roads and an on-site and off-site collection system. Each facility would have a single O&M building of up to approximately 1,000 square feet, 1,500 square foot graveled area for employee parking, an aboveground water storage tank, permanent water lines, a septic system, and other associated facilities. Permanent chain-link security fencing would be installed around the individual facility site perimeters, substations, ESSs, and other areas requiring controlled access. The project site is relatively flat and characterized by undeveloped open desert (with the exception of two residences and residential accessory structures), and historical agriculture. Development in the area surrounding the project sites

includes rural residences, agriculture, as well as renewable energy (solar and wind) facilities. The closest school to the project site is the Tropico Middle School, located approximately 4.5 miles east of the eastern boundary of the project site (eastern side of Chaparral). The nearest airport to the project site is Lloyd's Landing Airport, located approximately 2 miles northeast of the project site. State Route 14 (SR-14), the nearest highway, is located approximately 8 miles east of the project.

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. Phase I Environmental Site Assessments conducted for the project site were used to determine potential risks of encountering legacy contaminants at the site.

Photovoltaic Solar Module Technologies

Photovoltaic (PV) solar panels (known within the industry as "modules") that would be installed on the project site would consist of either crystalline silicon or cadmium telluride (CdTe) thin film technology. Crystalline silicon and thin film CdTe solar modules that would be installed on the project site may include small amounts of semiconductor or electrically conducting materials encapsulated within the modules that are considered to be hazardous such as lead or cadmium compounds. Because such materials are in a solid and non-leachable state, broken crystalline silicon and thin film CdTe solar modules would not be a source of pollution to surface water, stormwater, or groundwater. Crystalline silicon and thin film CdTe modules removed from the site would be recycled or otherwise disposed at an appropriate waste disposal facility. In addition, the energy storage systems would include industry-standard battery systems which contain chemical contents that are considered hazardous, such as lithium ion batteries as well as lead acid, sodium sulfur, and sodium or nickel hydride batteries.

Should thin film CdTe solar modules (CdTe PV) be installed on the project site, they would consist of a thin semiconductor layer that is in the environmentally stable form of a compound rather than the leachable form of a metal. The CdTe compound is encapsulated in the PV module with the PV module containing less than 0.1 percent Cd content by weight. Due to optimal optical properties, only a three-micron thin layer of CdTe is used to absorb incident sunlight, with Cd content per 8 square feet of PV module less than that of one C–size flashlight nickel-cadmium (NiCd) battery.

CdTe PV is a mature technology with two decades of field deployment. 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. Experimental leaching studies, theoretical worst-case modeling and field examinations concluded that CdTe PV modules pose little to no risk under foreseeable accidents such as fire, breakage, and extreme weather events like tornadoes and hurricanes (Virginia Tech University, 2019 and Fthenakis et al., 2020).

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, end-of-life disposal and in the event of exceptional accidents such as fire or breakage, CdTe PV modules do not present an environmental risk. CdTe releases are unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled at the end of their approximately 30-year life. The PV module manufacturer provides global CdTe module recycling services. 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.

Human health risk assessments looking at the environmental, health, and safety aspects of both crystalline silicon and thin film CdTe PV technologies have been evaluated by the International Energy Agency, concluding that CdTe PV modules do not present a health risk in the event of exceptional accidents such as fire or breakage, with regards to their use of lead and cadmium compounds, respectively (P. Sinha et al. 2018 and P. Sinha et al. 2019).

Historical Property Use

The project site largely consists of primarily undeveloped desert land (with the exception of two residences and residential accessory structures) with some past agriculture use. The project area is sparsely populated, although there are two residences on the project site and a few residences are located near or adjacent to the project site.

The surrounding properties consist of similar undeveloped land and renewable energy projects (solar and wind) with a few sparsely located rural residences. According to a review of the Department of Toxic Substances Control (DTSC) Envirostor database, there are no hazardous release sites located within a mile of either of the project sites (DTSC, 2018). Similarly, the State Water Resource Control Board's (SWRCB) GeoTracker database also showed no release sites nor reported leaking underground storage tanks (LUSTs).

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. According to a 2012 study conducted by the Massachusetts Clean Energy Center, the levels of such radiation from solar projects added to natural background sources are low (Massachusetts Clean Energy Center, 2012).

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 would construct off-site collection systems to interconnect into the California Independent System Operator (CAISO) grid at the Southern California Edison (SCE) Whirlwind Substation. The alignment is discussed in further in more detail in Chapter 3, *Project Description*, of this EIR.

On January 15, 1991, the California Public Utilities Commission (CPUC) initiated an investigation to consider its role in mitigating the health effects, if any, of electric and magnetic fields from utility facilities and power lines. A working group of interested parties, the California EMF Consensus Group, was created by the CPUC to advise it on this issue. The California EMF Consensus Group's fact-finding process was open to the public, and its report incorporated public concerns. Its recommendations were filed with the CPUC in March 1992. Based on the work of the California EMF Consensus Group, written testimony, and evidentiary hearings, CPUC's decision (93-11-013) was issued on November 2, 1993, to address public concern about possible EMF health effects from electric utility facilities. The conclusions and findings included the following:

> *"We find that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure. We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value."*

This continues to be the stance of the CPUC regarding standards for EMF exposure. Currently, the state has not adopted any specific limits or regulations regarding EMF levels from electric power facilities. However, the CPUC did adopt a policy that requires electric utilities operating within California agree to incorporate various measures into the construction of new or upgraded power lines and substations, and authorized each utility to develop and publish a set of "EMF Design Guidelines" implementing this policy. As a result, SCE published guidelines to reduce exposure of EMF from electrical utility transmission and distribution facilities. The proposed project is required to be designed to the published guidelines, including siting, construction, operation, and maintenance criteria.

In addition to transmission lines, the project proposes up to two onsite energy storage systems (ESS)., one to be located on each facility The ESS would be located on approximately 5 acres of land on each facility and would consist of battery storage modules placed in multiple prefabricated enclosures. The energy storage technology and design for the ESS has not been determined at this time, but could include any commercially available battery technology, including but not limited to lithium ion, lead acid, sodium sulfur, and sodium or nickel hydride. Either way, the energy storage would occur as direct current (DC) which produce static EMFs and has not been associated with adverse health effects.

Increase in Ambient Temperatures

All exposed surfaces (e.g., houses, cars, rocks) absorb heat produced by the sun. A "heat island" effect is generated when cities cover miles of land with structures (e.g., concrete buildings and asphalt roads), which absorb and store significantly more heat during the day than undeveloped earth. Additionally, these cities are filled with energy-consuming devices (e.g., engines, appliances, and heating, air-conditioning, and ventilation [HVAC] systems) that generate waste heat.

Solar arrays consist of solar panels mounted on aluminum and steel support structures. The support structures have little or no exposure to sunlight. The project site would not be covered entirely with solar panels. The amount of the sun's heat absorbed by a solar panel is similar to the amount of the sun's heat absorbed by open land. However, solar panels store less heat than the earth because they consist of a thin, lightweight glass that is surrounded by airflow. Therefore, heat dissipates quickly from a solar panel compared with solid earth, which dissipates heat slowly. The project would have energy-consuming devices (e.g., inverters). Therefore, the project would generate marginal amounts of waste heat on the project site. However, there is nothing in the record to date that would indicate that the project would significantly increase ambient air temperatures outside the project site.

Fthenakis and Yu from Columbia University and Brookhaven National Laboratory combined models with field data to determine the extent to which PV facilities altered ambient air temperatures (Fthenakis and Yu, 2013). Temperatures surrounding the facility were found to cool completely at night and the researchers determined that the PV facility "did not induce a day-after-day increase in ambient temperatures, and therefore, adverse micro-climate changes from a potential PV plant are not a concern". This study also concluded that increases in temperatures completely dissipated approximately 5-18 meters above the facility and that thermal energy "promptly dissipated" with distance from the facility. Remote sensing research produced by Edalat and Stephen from UNLV in 2017 supports the conclusions of Fthenakis and Yu (2013), demonstrating that land surface temperatures surrounding a solar facility were not significantly impacted by the solar facility (Edalat and Stephen, 2017).

Increased Noise

Noise from construction would be temporary over a period of up to 12 to 24 months for the project. The ambient noise regime in the project vicinity consists of undeveloped, solar farm, and rural residential uses and is a relatively quiet noise environment. The nearest sensitive noise receptors to the project are isolated residential land uses. As discussed in detail in Section 4.13, *Noise*, of this EIR, due to the relatively quiet noise environment in the project area associated with the current undeveloped land 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 not expected to disrupt or otherwise adversely affect residential uses in the area.

Hazardous Materials Transportation

There are no major highways that run in the vicinity of the project sites. The nearest highway is SR-14, a four-lane highway located approximately 9 miles east of the project. The transportation of hazardous materials within the State of California is subject to various federal, State, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway that is not designated for that purpose,

unless the use of a highway is required to permit delivery or the loading of such materials (California Vehicle Code, Sections 31602 (b) and 32104(a)). The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. Information on CHP requirements and regulatory authority is provided in Section 4.9.3, *Regulatory Setting*, below. According to Section 2.5.4 of the Kern County General Plan Circulation Element, SR-14 (approximately 8 miles east), SR-58 (approximately 13.5 miles north) and US 395 (approximately 45 miles east) are designated as adopted commercial hazardous materials shipping routes.

Airports

The nearest public airport to the project sites is Rosamond Skypark, located approximately 5.5 miles east of the project site. The closest airport to the project sites is the privately owned Lloyd's Landing Airport located approximately 2 miles northeast of the northern most portion of the study area. 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 high or very high fire risk, as determined by the Kern County General Plan and CAL FIRE (CAL FIRE, 2020a). Impacts related to wildfire hazards are further discussed in Section 4.18, *Wildfire*, of this EIR.

4.9.3 Regulatory Setting

Federal

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) was established in 1970 to consolidate in one agency a variety of federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. The EPA's mission is to protect human health and to safeguard the natural environment – air, water, and land – upon which life depends. The EPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for using permits and for monitoring and enforcing compliance. Where national standards are not met, the EPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the EPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," were enacted by Congress on December 11, 1980. This law (42 United States Code [USC] 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (Title 40, Code of Federal Regulations [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

Clean Water Act/Spill Prevention, Control, and Countermeasure Rule

The Clean Water Act (CWA) (33 USC 1251 et seq., formerly known as the Federal Water Pollution Control Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the United States. As part of the CWA, the EPA oversees and enforces the Oil Pollution Prevention regulation contained in 40 CFR 112, which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend, and implement spill prevention, control, and countermeasure (SPCC) plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total aboveground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "Navigable Waters" of the United States. The project site is located in a terminal drainage that does not discharge into a Navigable Waters of the United States as described in Section 4.18, *Hydrology and Water Quality*.

Other Regulations

Other federal regulations overseen by the EPA relevant to hazardous materials and environmental contamination include 40 CFR Parts 100 to 149 -- Water Programs, 40 CFR Parts 239 to 259 -- Solid Wastes, and 40 CFR Parts 260 to 279 -- Hazardous Waste. These regulations designate hazardous substances under applicable federal statutes; determine the reportable quantity for each substance that is

designated as hazardous; and establish quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration's (OSHA's) mission is to ensure the safety and health of U.S. workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. The OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR 1910, which include preparation of Health and Safety Plans (HASPs). HASPs identify potential hazards associated with a proposed land use and may provide appropriate mitigation measures as required. 29 CFR Section 1910.120(e) requires all employees working on site exposed to hazardous substances, health hazards, or safety hazards and their supervisors and management responsible for the site to receive training meeting the requirements of this paragraph before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards. These employees shall receive any necessary review training.

State

California Building Code, Section 608

Section 608 of the California Building Code includes requirements for battery energy storage systems greater than 20 kWh, which includes the proposed energy storage facilities. Section 608 includes requirements for vehicle impact protection, location, spacing between batteries, egress, security, and fire suppression systems.

California Public Utilities Commission General Order 95: Rules for Overhead Electric Line Construction

General Order 95 (GO 95) is the key standard governing the design, construction, operation, and maintenance of overhead electric lines within the State of California. It was adopted in 1941 and updated most recently in 2012. GO 95 includes safety standards for overhead electric lines, including minimum distances for conductor spacing, minimum conductor ground clearance, and standards for calculating maximum sag, electric line inspection requirements, and vegetation clearance requirements. The latter, governed by Rule 35, and inspection requirements, governed by Rule 31.2, are summarized below:

- Rule 35, *Tree Trimming,* defines minimum vegetation clearances around power lines. Rule 35 guidelines require 10-foot radial clearances for any conductor of a line operating at 110,000 Volts or more, but at less than 300,000 Volts. This requirement would apply to the proposed 230-kV lines.
- Rule 31.2, *Inspection of Lines*, requires that lines be inspected frequently and thoroughly for the purpose of ensuring that they are in good condition, and that lines temporarily out of service be inspected and maintained in such condition so as not to create a hazard.

Power Line Hazard Reduction (PRC 4292)

Public Resources Code (PRC) 4292 requires a 10-foot clearance around any tree branches or ground vegetation at the base of power poles carrying more than 110 kV. The firebreak clearances required by PRC 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of PRC 4296. Project structures would be exempt primarily because of their design specifications.

Power Line Clearance Required (PRC 4293)

PRC 4293 provides guidelines for line clearance, including a minimum of 10 feet of vegetation clearance around any conductor operating at 110 kV or higher.

Minimum Clearance Provisions (14 CCR 1254)

With respect to minimum clearance requirements, 14 CCR 1254 presents guidelines pertaining to non-exempt utility poles. The project structures would be exempt from the clearance requirements, with the exception of cable poles and dead-end structures.

The firebreak clearances required by 14 CCR 1254 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from the minimum clearance requirements by the provisions of 14 CCR 1255 or PRC 4296. The radius of the cylindroid is 10 feet, which is measured horizontally from the outer circumference of the specified pole or tower, with the height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space would be treated as follows:

- At ground level: Remove flammable materials, including ground litter, duff, and dead or desiccated vegetation that would propagate fire.
- From 0 to 8 feet above ground level: Remove flammable trash, debris, or other materials, grass, and herbaceous and brush vegetation. Remove all limbs and foliage of living trees up to a height of eight feet.
- From 8 feet to the horizontal plane of highest point of the conductor attachment: Remove dead, diseased, or dying limbs and foliage from living sound trees and any dead, diseased, or dying trees in their entirety.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered

hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

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. The CUPA in Kern County is the Environmental Health Services Division of the Kern County Public Health Services Department.

California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) was created in 1991 and unified California's environmental authority in a single cabinet-level agency and brought the California Air Resources Board (CARB), State Water Resource Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), CalRecycle, DTSC, Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal/EPA "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Their mission is to restore, protect, and enhance the environment and to ensure public health, environmental quality, and economic vitality.

Department of Toxic Substances and Control

DTSC, a department of Cal/EPA, is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. DTSC regulates hazardous waste primarily under the authority of the Federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

USC 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks or a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

California Office of Emergency Services

In order to protect public health and safety, and the environment, the California Office of Emergency Services (OES) is responsible for establishing and managing statewide standards for business and area plans relating to the handling and release, or threatened release, of hazardous materials. The OES requires that basic information on hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and health risks) be available to firefighters, public safety officers, and regulatory agencies. Typically, this information should be included in business plans in order to prevent or mitigate damage to the health and safety of persons and the environment from the release or threatened release of these materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code, Article 1—Hazardous Materials Release Response and Inventory Program (Sections 25500 to 25520) and Article 2—Hazardous Materials Management (Sections 25531 to 25543.3).

Title 19 CCR, Public Safety, Division 2, Office of Emergency Services, Chapter 4 - Hazardous Material Release Reporting, Inventory, and Response Plans, Article 4 (Minimum Standards for Business Plans) establishes minimum statewide standards for hazardous materials business plans. These plans must include the following: (1) a hazardous material inventory in accordance with Sections 2729.2 to 2729.7, (2)

emergency response plans and procedures in accordance with Section 2731, and (3) training program information in accordance with Section 2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the State. Each business will prepare a hazardous materials business plan if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance;
- 55 gallons of a liquid;
- 200 cubic feet of compressed gas;
- A hazardous compressed gas in any amount; or
- Hazardous waste in any quantity.

California Occupational Safety and Health Administration

California Occupational safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

California Highway Patrol

A valid Hazardous Materials Transportation License, issued by the California Highway Patrol (CHP), is required by the laws and regulations of State of California Vehicle Code Section 3200.5 for transportation of either:

- Hazardous materials shipments for which the display of placards is required by State regulations; or
- Hazardous materials shipments of more than 500 pounds, which would require placards if shipping greater amounts in the same manner.

Additional requirements on the transportation of explosives, inhalation hazards, and radioactive materials are enforced by the CHP under the authority of the State Vehicle Code. Transportation of explosives generally requires consistency with additional rules and regulations for routing, safe stopping distances, and inspection stops (14 CCR 6 [1] [1150–1152.10]). Inhalation hazards face similar, more restrictive rules and regulations (13 CCR 6 [2.5] [1157–1157.8]). Transportation of radioactive materials is restricted to specific safe routes.

Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Willow Springs Specific 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 and Willow Springs Specific Plan

related to hazards and hazardous materials that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Kern County General Plan

Chapter 1. Land Use, Open Space and Conservation Element

1.3 Physical and Environmental Constraints

Goal

Goal 1: To strive to prevent loss of life, reduce personal injuries and property damage, and minimize economic and social diseconomies resulting from natural disaster by directing development to areas that are not hazardous.

Policy

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes 2.6–2.9 and Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in an unmitigated significant impact.

Chapter 2. Circulation Element

2.5.4 Transportation of Hazardous Materials

Transportation-related accidents and spills of hazardous materials pose a serious threat to the traveling public and nearby sensitive land uses. Transportation of hazardous materials poses a short-term threat to public health.

Goal

Goal 1: Reduce risk to public health from transportation of hazardous materials.

Policies

Policy 1: The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.

Policy 2: Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.

Implementation Measure

Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.

Chapter 4. Safety Element

4.2 General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint

Implementation Measure

Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.

4.9 Hazardous Materials

Implementation Measure

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Chapter 5. Energy Element

5.4.5 Solar Energy Development

Policy

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Land Use, Open Space, and Conservation Element

1.1 Physical Constraints

Policy

Policy 3: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.

1.4. Public Facilities and Services

Policy

Policy 6: The County will ensure adequate fire protection to all Kern County residents.

Willow Springs Specific Plan

The entire project is subject to the provisions of the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in April 2008 and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Area. The hazards and hazardous materials-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project are outlined below (Kern County, 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included.

Land Use Element

Goal

Goal 15 To protect community residents from undue hazards and costs associated with road maintenance, slope instability, improper drainage, and inadequate sewage treatment.

Policy

Policy 8 Require developers to clean up any identified hazardous waste sites prior to submittal of any land division or development project.

Safety/Seismic Element

Goal

Goal 15 To protect community residents from undue hazards and costs associated with road maintenance, slope instability, improper drainage, and inadequate sewage treatment.

Mitigation/Implementation Measure

Measure 24 In order to combat the stormwater pollution created by the various land uses the following source control mitigation measures are required:

a) Periodic cleaning (i.e., street sweeping) of paved areas to remove small particle size sediments with absorbed pollutants caused by uses of the area.

b) Utilize established Best Management Practices (BMPs) for small on-site control of urban runoff water quality. These measures include infiltration trenches, infiltration basins, water quality inlets, vegetative biofilter, grass swales, and porous pavement.

Kern County Multi-Hazard Mitigation Plan

The latest Kern County Multi-Hazard Mitigation Plan was developed in 2006. The Plan was developed by a Hazard Mitigation Planning Committee and identifies goals, objectives and actions pertaining to mitigating impacts from identified natural hazards. The public at large had an opportunity to comment prior to the completion of the Plan's final draft. FEMA realizes the importance of mitigation planning and offers incentives to communities that develop one. By following FEMA guidelines for approval of this plan, Kern County can be eligible for grant funding intended for mitigation projects (KCFD, 2012).

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 2019 California Fire Code and the 2018 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees.

Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March 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) and the project site is designated as a moderate fire hazard severity zone within the Tehachapi fire plan management area (KCFD, 2018).

Fire Prevention Standard No. 503-507 Solar Panels

The Kern County Fire Department Fire Prevention Division adopted Standard No. 503-507 Solar Panels (Ground Mounted, Commercial & Residential) on March 27, 2019. The standard is implemented in accordance with the 2016 CFC and Kern County Ordinance and is an official interpretation of the Kern County Fire Marshal's Office. The standard outlines installation requirements for photovoltaic ground-mounted and roof-mounted solar panels. The proposed project would mount systems for the modules on steel support posts that would be pile driven into the ground and would therefore comply with the ground mounted requirements of this fire prevention standard. Ground mounted solar panel requirements of this standard include water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD, 2019c).

Kern County Public Health Services Department/Environmental Health Services Division

The County of Kern Environmental Health Services Division of the Public Health Services Department is the CUPA for the project area, which provides site inspections of hazardous materials programs (above ground storage tanks, USTs, hazardous waste treatment, hazardous waste generators, hazardous materials management and response plans, and the California Fire Code). This Department also provides emergency response to hazardous materials events, performing health and environmental risk assessment and substance identification.

Kern County and Incorporated Cities Hazardous Waste Management Plan

In response to the growing public concern regarding hazardous waste management, State Assembly Bill 2948 enacted legislation authorizing local governments to develop comprehensive hazardous waste management plans. The intent of each plan is to ensure that adequate treatment and disposal capacity is available to manage the hazardous wastes generated within the local government's jurisdiction.

The Kern County and Incorporated Cities Hazardous Waste Management Plan (Hazardous Waste Plan) was first adopted by Kern County and each incorporated city before September 1988 and was subsequently approved by the State Department of Health Services. The Hazardous Waste Plan was updated and incorporated by reference into the Kern County General Plan in 2004 as permitted by Health and Safety Code Section 25135.7(b) and, thus, must be consistent with all other aspects of the Kern County General Plan.

The Hazardous Waste Plan provides policy direction and action programs to address current and future hazardous waste management issues that require local responsibility and involvement in Kern County. In addition, the Hazardous Waste Plan discusses hazardous waste issues and analyzes current and future waste generation in the incorporated Cities, County, and State and federal lands. The purpose of the Hazardous Waste Plan is to coordinate local implementation of a regional action to affect comprehensive hazardous waste management throughout Kern County. The action program focuses on development of programs to

equitably site needed hazardous waste management facilities; to promote onsite source reduction, treatment, and recycling; and to provide for the collection and treatment of hazardous waste from small-quantity generators. An important component of the Hazardous Waste Plan is the monitoring of hazardous waste management facilities to ensure compliance with federal and State hazardous waste regulations.

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 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 would have a significant impact related to hazards and hazardous materials if it would:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4 mile of an existing or proposed school;

d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would 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. Would implementation of the project generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste?

Specifically, would the project exceed the following qualitative threshold:

The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:

i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and

ii. Are associated with design, layout, and management of project operations; and

iii. Disseminate widely from the property; and

iv. Cause detrimental effects on the public health or wellbeing of the majority of the surrounding population.

Project Impacts

Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction

Construction of the proposed project (solar facilities, connection to previously approved interconnection lines, and associated appurtenances) would not involve the routine transport, use, or disposal of substantive quantities of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. Most of the hazardous materials use and hazardous waste generated by the project would occur during the temporary construction period. Likely uses would include cleaning fluids, solvents, petroleum products, dust palliative, and herbicides. Some solid hazardous waste, such as welding materials and dried paint, may also be generated during construction. These materials would be transported to the project site during construction, and any hazardous wastes that are produced as a result of the construction of the project would be collected and transported away from the site in accordance with best management practices (BMPs). During construction of the project, material safety data sheets for all applicable materials present at the site would be made readily available to onsite personnel in accordance with required BMPs as part of a Stormwater Pollution Prevention Plan (see Section 4.10 *Hydrology and Water Quality*). Workers would be trained to properly identify and handle all hazardous materials. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment and/or disposal facility. All hazardous waste shipped offsite for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location. During construction of the facilities, non-hazardous construction debris would be generated and disposed of in local landfills or recycled. Sanitary waste would be managed using: (a)portable toilets and portable hand washing facilities serviced by truck, located at a reasonably accessible onsite location, and (b) restroom facilities inside of commercial coaches, served by onsite septic systems. Mitigation Measure MM 4.17-1 would require debris and waste generated to be recycled to the extent feasible during construction, operation, and decommissioning and the designation of a Recycling Coordinator to facilitate recycling of all waste, to the extent feasible, through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes.

Hazardous materials such as petroleum fuels and lubricants used on field equipment would be subject to the Material Disposal and Solid Waste Management Plan and other measures to limit releases of hazardous materials and wastes (see further discussion of best management practice (BMP) requirements in Section 4.10,

Hydrology and Water Quality, of this EIR). Recyclable materials including wood, shipping materials, and metals would be separated when possible for recycling. Liquids and oils in the transformers and other equipment would be used in accordance with applicable regulations. The disposal of all oils, lubricants, and spent filters would be performed in accordance with all applicable regulations including the requirements of licensed receiving facilities. Overall the relatively limited use and small quantities of hazardous materials, and subsequently transport and disposal of such materials, during construction would be controlled through compliance with applicable regulations including the Kern County and Incorporated Cities Hazardous Waste Management Plan. As such, impacts during construction would be less than significant.

Operation

Operation and maintenance (O&M) activities associated with PV solar facilities are relatively minor when compared to conventional power plants or even other industrial land uses, and would require very limited use of hazardous materials and generation of hazardous waste. Any hazardous materials that would be used would be stored onsite and in designated areas in accordance with a Hazardous Materials Business Plan (see below). The project sites would be secured and enclosed by a fence surrounding each site to prevent public access to hazardous materials and the PV panels. The interconnection (power line) portions of the project would largely use previously approved gen-tie lines and these connections would not require use of hazardous materials during operation (see EMF discussion below).

Primary O&M activities that would occur on the project sites during operation would consist of panel washing but would also include: liaison and remote monitoring; administration and reporting; semi-annual and annual services; remote operations of inverters; site security and management; additional communication protocol; and repair and maintenance of solar facilities and other project facilities. No heavy equipment would be necessary during normal project operation. O&M vehicles would include trucks (pickup, flatbed), forklifts, and loaders for routine and unscheduled maintenance, and water trucks for solar panel washing. Large heavy-haul transport equipment and cranes may be brought to the project site infrequently for equipment repair or replacement. Long-term maintenance and equipment replacement would be scheduled in accordance with manufacturer recommendations. Solar panels are warranted for 25 years or longer and are expected to have a life of 30 or more years. Moving parts, such as motors and tracking module drive equipment, motorized circuit breakers and disconnects, and inverter ventilation equipment, would be serviced on a regular basis, and unscheduled maintenance would be conducted as necessary. Mitigation Measure MM 4.9-1, which requires the preparation of a Hazardous Materials Business Plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to maintenance workers and/or the public.

The PV modules that would be installed on the project site utilize CdTe thin film or crystalline silicon technology. PV modules are constructed as solid-state monolithic devices to achieve long-term field durability to withstand harsh environmental conditions for 25 years or more. Encapsulation of the module components is achieved with use of a polymer laminate material (e.g., ethylene vinyl acetate or polyolefin) in a glass-encapsulant-backsheet or glass-encapsulant-glass design. The encapsulant bond strength is on the order of 5 megapascals (~50 kg/cm^2) making the modules very difficult to break open (i.e., to separate the front and back of the module). For example, this high encapsulant bond strength is the reason why efficient delamination is a core challenge for recyclers attempting to reverse engineer an end-of-life PV module into its raw materials (P. Sinha et al. 2018 and P. Sinha et al. 2019).

As described above in the Environmental Setting regarding CdTe thin film modules, CdTe is generally bound to a glass sheet by a vapor transport deposition during the manufacturing process, followed by sealing the CdTe layer with a laminate material, and then encapsulating it in a second glass sheet. It has been demonstrated that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil. The modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions. The PV modules with CdTe thin film technology conform to the International Electrotechnical Commission (IEC) test standards IEC 61646 and IEC61730 PV as tested by a third party testing laboratory certified by the IEC. In addition, the PV modules also conform to Underwriters Laboratory (UL) 1703 a standard established by the independent product safety certification organization. In accordance with UL 1703, the PV modules undergo rigorous accelerated life testing under a variety of conditions to demonstrate safe construction and monitor performance. During normal operations, CdTe PV modules do not present an environmental risk. CdTe releases are also unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled at the end of their approximately 30-year life. Studies indicate that unless the PV module is purposefully ground to a fine dust, use of CdTe in PV modules do not generate any emissions of CdTe (Fthenakis et al 2003). The project includes operational and maintenance protocols that would be used to identify and remove damaged or defective PV modules during annual inspections. The PV module manufacturer created the first global and comprehensive module collection and recycling program in the PV industry in 2005. Therefore, the use of a CdTe PV system would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during normal operations.

Environmental risks of both crystalline silicon and thin film CdTe PV technologies have been evaluated by the International Energy Agency, using U.S. Environmental Protection Agency (USEPA) fate and transport methods for potential emissions to air, water, and soil from non-routine events such as fire and field breakage. Based on comparisons with USEPA health screening levels, crystalline silicon and thin film CdTe PV technologies do not present a health risk in the event of fire or breakage, with regards to their use of lead and cadmium compounds, respectively (P. Sinha et al., 2018 and P. Sinha et al., 2019).

Project operations would require the use of transformer oil at the substations and the energy storage systems (ESS) could contain battery acids, as well as lithium ion, lead acid, sodium sulfur, and sodium or nickel hydride. All transformers would be equipped with spill containment areas and battery storage would be in accordance with OSHA requirements such as inclusion of ventilation, acid resistant materials, and spill response supplies. All components would have a comprehensive SPCC plan, in accordance with all applicable federal, State, and local regulations. Dust palliatives and herbicides, if used during operations to control vegetation, may be transported to the project site. These materials would be stored in appropriate containers to prevent accidental release. SR-14 would be the likely designated route for the transport of hazardous materials located on or immediately adjacent to the project site. In addition, implementation of Mitigation Measure MM 4.9-1, would further reduce impacts related to hazards to a less-than-significant level.

Further, implementation of the project would not result in the significant risk of EMFs associated with overhead power lines, as each facility would interconnect into an existing Whirlwind Substation. To the extent commercially feasible, the project intends to utilize previously approved and/or existing interconnection facilities associated with other generating and transmission projects to minimize potential environmental impacts. In addition, the project would not construct sensitive uses under the existing lines but would adhere to applicable CPUC requirements on location of any gen-tie lines or gen-tie connections.

As the State has not adopted any specific limits or regulations regarding EMF levels from electric power facilities, impacts in this regard would be less than significant.

Decommissioning and Disposal

During the decommissioning and disposal process, it is anticipated that all project structures would be fully removed from the ground. Above-ground equipment that would be removed would include electrical wiring, equipment on the inverter pads, and the interconnection transformer pad and associated equipment. Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment offsite. Removal of the PV modules would include removal of the racks on which the solar panels are attached, and their placement in secure transport crates and a trailer for storage, for ultimate transportation to another facility or to be recycled.

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 gates 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.

In the case of thin film CdTe PV technology, the PV module manufacturer would likely provide CdTe module collection and recycling services. In any case, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules. CdTe releases are unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled at the end of their approximately 30-year life. Studies indicate that unless the PV module is purposefully ground to a fine dust, use of CdTe in PV modules do not generate any emissions of CdTe (Fthenakis et al., 2003 and Fthenakis et al., 2020. These studies have consistently concluded that use of CdTe PV modules do not present an environmental risk.

In the case of both crystalline silicon and thin film CdTe PV technology, a national PV module recycling network has been established by the U.S. Solar Energy Industry Association (SEIA) for providing module collection and recycling services: https://www.seia.org/initiatives/seia-national-pv-recycling-program

As 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 to the extent feasible, 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 contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits. Given that the normal use and disposal of crystalline silicon and thin film CdTe PV modules would not present an environmental risk, project implementation would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during decommissioning and disposal activities. In addition, implementation of Mitigation Measure MM 4.17-1, would further reduce impacts related to hazards to a less-than-significant level.

Mitigation Measures

Implement Mitigation Measure MM 4.17-1 (see Section 4.17, *Utilities and System Services*, for full mitigation measure text).

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:

a. Delineate hazardous material and hazardous waste storage areas

b. Describe proper handling, storage, transport, and disposal techniques

c. Describe methods to be used to avoid spills and minimize impacts in the event of a spill

d. Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction and operation

e. Establish public and agency notification procedures for spills and other emergencies including fires

f. Describe federal, state, or local agency coordination, as applicable, and clean-up efforts that would occur in the event of an accidental release.

g. Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site

The project proponent shall ensure that all contractors working on the project are familiar with the facility's HMBP as well as ensure that one copy is available at the project site at all times. In addition, a copy of the accepted HMBP from CERS shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the projects permanent record.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1 and MM 4.17-1, impacts would be less than significant.

Impact 4.9-2: The project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Construction

According to the California Department of Conservation – Division of Oil, Gas and Geothermal Resources (which as of January 1, 2020 is known as the Geologic Energy Management Division (CalGEM)), the project site is not located within a known oil production field, nor does the project site have any known active or abandoned oil wells (DOGGR, 2018). As a result, construction and development of the proposed

project is unlikely to expose employees or construction workers to the dangers associated with operating a facility near an oil well.

Potential impacts that may result from construction of the project include the accidental release of materials, such as cleaning fluids and petroleum products including lubricants, fuels, and solvents. Implementation of Mitigation Measure MM 4.9-1 which would provide methods to be used to avoid spills and minimize impacts in the event of a spill by providing procedures for handling and disposing hazardous materials as well as public and agency notification procedures for spills and other emergencies including fires, would reduce this impact to a less-than-significant level.

Despite the relatively open spaces surrounding the different sites, nearby sensitive receptors could be exposed to pollutant emissions during construction of the project, resulting in a potentially significant impact. An adverse risk related to exposure to hazardous materials could result from the installation and use of transformers, grading of the site, the application of herbicides, or other construction or operation processes because of the distance between the sensitive receptors and the project site. Implementation of Mitigation Measure MM 4.9-2, which regulates the use of herbicides as described below, would reduce impacts related to sensitive receptors to a less-than-significant level.

Operation

The PV modules and inverters would produce no hazardous waste during operation. Each enclosed transformer at the substation would include mineral oil, but secondary containment would be provided in accordance with applicable federal, State, and local laws and regulations. The mineral oil contained in each transformer does not normally require replacement, and mineral oil disposal would be in accordance with all applicable federal, State, and local laws and regulations.

As stated in the environmental setting above, it has been demonstrated that standard operation of crystalline silicon and CdTe thin film PV systems does not result in pollution emissions to air, water, or soil. Crystalline silicon and CdTe thin film PV modules 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 crystalline silicon or CdTe thin film solar modules. Similarly, fire damage would not result in the release of hazardous materials. Crystalline silicon and CdTe thin film PV modules do not pose a threat to nearby residences.

Regarding thin film CdTe PV technology, CdTe releases are unlikely to occur from accidental breakage of or fires involving the PV modules. CdTe is a highly stable semiconductor compound due to strong chemical bonding that translates to extremely low solubility in water, low vapor pressure, and a melting point greater than 1,000 degree Celsius (˚C). Potential impacts to soil, air, and groundwater quality from broken CdTe PV modules are highly unlikely to pose a potential health risk as they are below both human health screening levels and background levels (Sinha et al., 2012)

Potential CdTe emissions from fire are unlikely to occur at the project site because of the lack of fuel to support a sustained wildfire. Grass fires are the most likely fire exposure scenario for ground-mounted PV systems, and these fires tend to be short-lived due to the thinness of grass fuels. As a result, these fires are unlikely to expose PV modules to prolonged fire conditions or to temperatures high enough to volatilize CdTe, which has a melting point of 1,041˚C. Moreover, even if a desert wildfire could reach that temperature, the actual CdTe emissions from a PV module would be insignificant (~0.04 percent) due to encapsulation in the molten glass matrix (Fthenakis et al., 2003).

Potential CdTe emissions from broken PV modules exposed to precipitation are also unlikely. Based on warranty return data, the breakage rate of CdTe PV modules is low, one percent over 25 years, which translates to an average of 0.04 percent per year. This breakage rate is an overestimate because over one-third of PV module breakage occurs during shipping and installation. Modules that break during shipping and installation are removed from the construction site and returned to a manufacturing facility for recycling. Even if the CdTe semiconductor layer becomes exposed to the environment, it strongly resists being released from the PV module into the environment, and CdTe has an extremely low solubility in water.

The CdTe PV modules do not pose a threat to nearby residences. The use of CdTe PV modules at the project site would not result in human or aquatic exposure of cadmium. A recent research article, Fate and Transport Evaluation of Potential Leaching Risks from Cadmium Telluride Photovoltaics (Sinha et al., 2012), further substantiates that during operation, CdTe PV modules do not pose a threat to human health or the environment due to its construction. The study evaluates the worst-case scenario to estimate potential exposures to CdTe compounds in soil, air or groundwater. The results show that exposure point concentrations in soil, air, and groundwater are one to six orders of magnitude below human health screening levels and below background levels, indicating that it is highly unlikely that exposures would pose potential health risks to onsite workers or offsite residents.

Operational environmental risks for both crystalline silicon and thin film CdTe PV technologies have been evaluated by the International Energy Agency, concluding that they do not present a health risk in the event of exceptional accidents such as fire or breakage, with regards to their use of lead and cadmium compounds, respectively (P. Sinha et al., 2018 and P. Sinha et al., 2019).

In addition, the hazardous materials that would be present in the ESS would be contained within specifications that follow applicable federal, State and local requirements. OSHA requirements call for the inclusion of appropriate ventilation, acid resistant materials, and presence of spill protection supplies.

Removal and/or maintenance of vegetation may require pesticide and herbicide use during both construction and operation. If not handled properly, use of these products could create a hazard to the public (construction workers, maintenance employees, and nearby residences), resulting in a potentially significant impact. Mitigation Measure MM 4.9-2 would reduce impacts related to use of pesticides and herbicides to a less-than-significant level.

As noted above, the project would not involve the routine transport, use, or disposal of substantial quantities of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. The closest designated route for the transport of hazardous materials is SR-14 which is approximately 9 miles from the project site. Adherence to regulations and standard protocols during the storage, transportation, and usage of any hazardous materials would minimize and avoid the potential for significant impacts related to upset and accident conditions.

Overall, adherence to regulations and standard protocols during the storage, transportation, and usage of any hazardous materials, and implementation of Mitigation Measure MM 4.9-2 would minimize or reduce potential impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials, to a less-than-significant level.

Decommissioning and Disposal

The decommissioning and disposal process is described under Impact 4.9-1, above. Panel materials would either be recycled, or would be disposed of in accordance with local, state, and Federal regulations. 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. In the case of both crystalline silicon and thin film CdTe PV technology, a national PV module recycling network has been established by the U.S. Solar Energy Industry Association (SEIA) for providing module collection and recycling services: https://www.seia.org/initiatives/seia-national-pv-recycling-program. Batteries within the energy storage systems 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 feasible 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

Implement Mitigation Measures of MM 4.9-1 and MM 4.17-1 would be required.

MM 4.9-2: The project proponent/operator shall continuously comply with the following:

a. The construction contractor or project personnel shall use herbicides that are approved 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 annually to the Kern County Planning and Natural Resources Department.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1, MM 4.9-2 and MM 4.17-1, impacts would be less than significant.

Impact 4.9-3: The project would emit hazardous emissions or involves handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.

The project site is not located within 0.25-mile of any school. The nearest school to the project site is the Tropico Middle School, located approximately 4.5 miles east of the project site (eastern side of the Chaparral site) in the unincorporated community of Rosamond. Therefore, there would be no impact related to hazardous emissions within 0.25-mile of a school.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.9-4: The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

As discussed above, the project site is not identified in any of the California hazardous materials databases. Searches were completed for the subject parcels in the following hazardous materials lists: Cal/EPA's Cortese List including the California Department of Toxic Substances and Control's EnviroStor database of hazardous substances release sites; and Geotracker, the California database of leaking underground storage tanks (DTSC, 2018; SWRCB, 2018; and DOGGR, 2018). Additionally, the Phase 1 Environmental Site Assessments for the Chaparral and Rabbitbrush solar facilities revealed no evidence of RECs, controlled RECs (CREC), historical RECs (HREC), or de minimis conditions in connection with the project site (AECOM, 2019). Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.9-5: The project would result in a safety hazard or excessive noise for people residing or working in the project area, for a project located within the adopted Kern County Airport Land Use Plan.

The project area is not located within an area covered by the Kern County Airport Land Use Compatibility Plan (ALUCP). The nearest airports to the project sites are the privately owned Lloyd's Landing approximately 0.523 miles northeast of Chaparral Solar Facility and 3 miles to the northeast of the Rabbitbrush Solar Facility, Rosamond Skypark approximately 5.5 miles to the east, the Mojave Air and Space Port approximately 15 miles to the northeast, and the Mountain Valley Airport (a private airport which allows private access) approximately 15 miles to the north. Safety hazards are not anticipated for people residing or working in the project area with respect to the project's proximity to an airport. Therefore, there are no impacts.

Mitigation Measures

No mitigation would be required.

Level of Significance

No impact.

Impact 4.9-6: The project would impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

The project would not interfere with any existing emergency response plans, emergency vehicle access, or personnel access to the project site. The project site is located in a remote area with several alternative access roads allowing access to the project site in the event of an emergency. Access would be maintained throughout construction, and appropriate detours would be provided in the event of potential road closures. Therefore, no impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan are anticipated.

Mitigation Measures

No mitigation would be required.

Level of Significance after Mitigation

No impact.

Impact 4.9-7: The project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The project site is not located within a high fire hazard severity zone (CAL FIRE, 2020a); see Section 4.18, *Wildfire*. However, there is sparse vegetation onsite and site preparation would involve the removal of additional vegetation, although natural vegetation may be maintained if it does not interfere with project

construction or the health and safety of onsite personnel. The project would also include an ESS component which, while they generally burn with difficulty, can in fact burn or become damaged by fire and generate fumes and gases that are extremely corrosive. Dry chemical, carbon dioxide, and foam are the preferred methods for extinguishing a fire involving batteries as water is not useful in extinguishing battery fires. As discussed further in Section 4.14, *Public Services*, of this EIR, the project proponent would implement Mitigation Measure MM 4.14-1, which would require the preparation and submittal of a Fire Safety Plan to the Kern County Fire Department for review and approval. The purpose of the Fire Safety Plan would be to eliminate causes of fire, prevent loss of life and property by fire, to comply with County and County Fire Protection District standards for solar facilities, and to comply with the OSHA standard of fire prevention, 29 CFR 1910.39. The fire safety plan would address fire hazards of the different components of the project, including the ESS, 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 proximity to the project site. While the project is not anticipated to significantly increase the risk of wildfire, Mitigation Measure MM 4.14-1 would be implemented to ensure a fire safety plan for construction, operation and decommissioning of the project is incorporated as part of the project. With mitigation, potential impacts from wildfire would be reduced to a less-than-significant level.

See also Section 4.18, *Wildfire*, of this EIR for additional discussion of wildfire issues.

Mitigation Measures

Implement Mitigation Measure MM 4.14-1 (see Section 4.14-1, *Public Services*, for full text).

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts would be less than significant.

Impact 4.9-8: The project would generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, would the proposed project exceed the following qualitative threshold: the presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the proposed project is significant when the applicable enforcement agency determines that any of the vectors:

- **i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; or**
- **ii. Are associated with design, layout, and management of proposed project operations; or**
- **iii. Disseminate widely from the property; or**
- **iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.**

Project-related infrastructure is not expected to result in features or conditions that could potentially provide habitat for vectors such as mosquitoes, flies, cockroaches, or rodents (such as standing water, agricultural products, or agricultural waste). The project site would produce a small amount of solid waste from construction activities. This may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation waste. These wastes would be segregated, where practical, for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. Construction and operation of the proposed solar arrays and associated facilities would not produce excessive wastes, standing water, or other features that would attract nuisance pests or vectors. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, multiple projects, including several utility-scale solar and wind energy production facilities, are proposed throughout Kern County. As shown in **Table 3-4**, *Cumulative Project List*, other solar energy projects are either operational, in construction or proposed within the region. The geographic scope of impacts associated with hazardous materials generally encompasses the project sites and a 0.25-mile-radius area around the project sites. A 0.25-mile-radius area allows for a conservative cumulative analysis that ensures that all potential cumulative impacts will be assessed. Similar to other potential impacts, such as those related to geology and soils, risks related to hazards and hazardous materials are typically localized in nature since they tend to be related to onsite existing hazardous conditions and/or hazards caused by the project's construction or operation. A geographic scope of a 0.25-mile-radius area also coincides with the distance used to determine whether hazardous emissions or materials would have a significant impact upon an existing or proposed school, as discussed above. The project's compliance with Mitigation Measure MM 4.9-1 and MM 4.9-2 is similar to existing regulatory requirements that other projects would be required to adhere to and would avoid hazardous material-related impacts from occurring at any of the schools of the area.

Impacts regarding the handling, use, and/or storage of hazardous materials would be project specific and would not cumulatively contribute to impacts. An accident involving a hazardous material release during project construction or operation through upset or accident conditions including site grading and the use and transport of petroleum-based lubricants, solvents, fuels, batteries, herbicides, and pesticides to and from the project site would be location specific. Conformance with existing State and County regulations, as well as project safety design features and the implementation of Mitigation Measure 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 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, MM 4.9-2, MM 4.14-1, of Section 4.14, *Public Services*, (Fire Safety 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 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 sites are not located within an airport land use plan influence area and thus is not expected to result in any cumulative contribution to hazards associated with airports or airstrip land use plans or otherwise provide any cumulatively considerable air traffic hazards.

Mitigation Measures

Implement of Mitigation Measures MM 4.9-1 and MM 4.9-2, MM 4.14-1, and MM 4.17-1 (see Sections 4.14-1, *Public Services*, and 4.17, *Utilities and System Services*, for full text).

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1 and MM 4.9-2, MM 4.14-1, and MM 4.17-1, cumulative impacts would be reduced to less than significant.

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Section 4.10
Hydrology and Water Quality

4.10.1 Introduction

This section of the Environmental Impact Report (EIR) describes the hydrological environmental and regulatory settings, addresses potential impacts of the project on hydrology and water quality, and discusses mitigation measures to reduce impacts, where applicable. The information in this section is based on multiple online sources and published documents, as well as the technical documents prepared for the project including, Geotechnical Engineering Reports (Terracon, 2019 and Terracon, 2020a and 2020b) located in Appendix H, Preliminary Drainage Study (Wallace Group, 2019) located in Appendix K, and the Water Supply Assessment (AECOM, 2020) located in Appendix L of this EIR.

4.10.2 Environmental Setting

Regional Setting

The project site is located in the northwestern portion of the Mojave Desert on the northern end of the Antelope Hydrologic Unit (IRWM, 2019). The Antelope Valley Region is a triangular-shaped, topographically closed basin bordered on the southwest by the San Gabriel Mountains, on the northwest by the Tehachapi Mountains, and on the east by a series of hills and buttes that generally follow the Los Angeles/San Bernardino County line.

Antelope 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 is geographically unique because it does not outlet to the Pacific Ocean and is considered a closed system. 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 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. Much of the runoff occurs as sheet flow. The Willow Springs Sub-Watershed is a closed basin inside of the Antelope Valley; therefore, there is no connection to the ocean and any precipitation or surface water is transferred via ephemeral streams to existing playas. The closest playa to the project site is Rosamond Lake to the southeast of the project site, approximately 9 miles from the proposed project.

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 unincorporated 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 14 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.

More specifically, the project site is located near the community of Willow Springs, where, according to the nearest weather station of Backus Ranch, temperature ranges from an average monthly high of 98.5 degrees Fahrenheit in July to a low below freezing of 29.9 degrees Fahrenheit in January. Average rainfall is approximately 6.18 inches annually (WRCC, 2020).

Site Hydrology

Surface Hydrology and Drainage

Topography in the project site is relatively flat, and slopes to the southeast. Elevations range from approximately 2,710 feet (826 meters [m]) in the north and northwestern portion of the project to approximately 2,460 feet (750 m) in the southeast portion of the project site. As a result, the project site drains from the northwest to the southeast. However due to the relatively low topographic relief, lack of development and minimal vegetation, most of the drainage flow originating in the study area infiltrates into the soils onsite. There are a number of drainages that flow in a general northwest to southeast direction that originate from the upland regions of the Tehachapi Mountains north of the sites. Site drainage is primarily shallow sheet flow, with some well-defined channels in the steeper terrain. Regional watersheds draining

to each of the three sites are large and characterized by steep upper canyons transitioning to sheet flow and shallow concentrated flow through alluvial fans spreading across the Antelope Valley. Multiple significant ephemeral drainages cross the study area, most notably Cottonwood Creek and Oak Creek. All three sites are tributary to Rosamond Dry Lake (Wallace Group, 2019).

Floodplains

The Federal Emergency Management Agency (FEMA) delineates flood hazard areas on its Flood Insurance Rate Maps (FIRMs); FIRMs are discussed in more detail below under Section 4.10.3, Regulatory Setting. According to the most recent FEMA FIRMs (No. 06029C4000E), all of the project sites are located within a 100-year flood zone, Zone A (Wallace Group, 2019). Areas designated Zone A are flood hazard areas within a 100-year flood zone that have a 1 percent chance for flooding annually but no base flood elevation has been determined.

Soil Types and Erosion

According to the Soil Survey for Kern County, the project sites consist primarily of Cajon loamy sands, Adelanto loamy sands and coarse sandy loam, and Arizo gravelly loamy sand (NRCS, 2020). Sandy soils typically have low cohesion and have a relatively higher potential for erosion when exposed to wind or moving water. Erosion potential onsite based on soil texture, slope length and slope steepness is low. Since the project site has minimal to no vegetation cover, erosion potential is slightly higher than it would be if it was densely vegetated. Conversely, the low topographic relief of the site reduce the erosion potential. See also Section 4.7-2, *Geology and Soils*, for more information on soil erosion potential.

Groundwater Resources

Antelope Valley Groundwater Basin

The project site is located 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 above mean sea level (msl) to 3,500 feet above msl. The Antelope Valley Groundwater Basin is bounded on the northwest by the Garlock fault zone at the base of the Tehachapi Mountains and on the southwest by the San Andreas fault zone at the base of the San Gabriel Mountains. The Antelope Valley Groundwater Basin is bounded on the east by ridges, buttes, and the low hills that form a surface and groundwater drainage divide and on the north by the Fremont Valley Groundwater Basin. The Antelope Valley Groundwater Basin and the Fremont Valley Groundwater Basin are divided by a southeastward-trending line that extends 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 complex Antelope Valley Groundwater Basin is divided by the U.S. Geological Survey (USGS) into 12 subunits based on differential groundflow patterns, recharge characteristics, and geographic location, as well as by controlling geologic structures. The Antelope Valley Groundwater Basin's subunits are Finger Buttes, West Antelope, Neenach, Willow Springs, Gloster, Chaffee, Oak Creek, Pearland, Buttes, Lancaster, North Muroc, and Peerless. The project sites are located within the Willow Springs sub-basin (AECOM, 2020).

Groundwater in the Antelope Valley 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.

The basin has been identified as being in a state of overdraft and as a result a Judgement for adjudication was finalized in December 2015. After a long and complicated process, the parties laid the groundwork for implementation of the Judgment. The Judgment and Physical Solution for the Antelope Valley Groundwater Adjudication The adjudication provides a framework to sustainably manage the basin and reduce groundwater level declines and subsidence. Water supplemented by the State Water Project has been important to extending water supply to increase demands and has reduced pressure on groundwater resources in some parts of the Basin (AECOM, 2020). However, groundwater elevation has increased moderately in the Willow Springs and Neenach subbasins over the past ten years. Additionally, groundwater levels measured at USGS monitoring points near the project sites report normal to above normal conditions (AECOM, 2020).

4.10.3 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA required states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint – source discharges to surface water. Those discharges are the regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Board (RWQCBs). The project site is within the Lahontan RWQCB. Projects that disturb one or more acres, including the proposed project, are required to obtain NPDES coverage under the Construction General Permits.

Section 401, Water Quality Certification. Section 401 of the CWA requires that, prior to issuance of any federal permit or license, any activity, including river or stream crossing during road, pipeline, or transmission line construction, which may result in discharges into waters of the U.S., must be certified by the state, as administered by the RWQCB. This certification ensures that the proposed activity does not violate state and/or federal water quality standards.

Section 402, National Pollutant Discharge Elimination System. Section 402 of the CWA authorizes the State Water Resources Control Board (SWRCB) to issue a NPDES General Construction Storm Water Permit (Water Quality Order 2009-0009-DWQ), referred to as the "General Construction Permit." Construction activities can comply with and be covered under the General Construction Permit provided that they:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting

stormwater and with the intent of keeping all products of erosion from moving off site into receiving waters.

- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs.

NPDES regulations are administered by the Lahontan RWQCB at the project site.

Section 404, Discharge of Dredged or Fill Materials. Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material in waters of the U.S., including wetlands. For purposes of section 404 of the CWA, the limits of non-tidal waters extend to the ordinary high water line, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil, and presence of debris. When an application for a Section 404 permit is made the applicant must show it has:

- Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable;
- Minimized unavoidable impacts on waters of the U.S. and wetlands; and
- Provided mitigation for unavoidable impacts.

Section 404 of the CWA requires a permit for construction activities involving placement of any kind of fill material into waters of the U.S. or wetlands. A water quality certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for water quality certification (or waiver thereof) from the Lahontan RWQCB. Project activities would adhere to state and federal water quality standards and would be in compliance with Sections 401 and 404 of the CWA.

Section 303, Water Quality Standards and Implementation Plans. Section 303(d) of the CWA (33 U.S. Code 1250, et seq., at 1313(d)) requires states to identify "impaired" water bodies as those which do not meet water quality standards. States are required to compile this information in a list and submit the list to the U.S. Environmental Protection Agency for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, states are required to prioritize waters and watersheds for future development of total maximum daily loads (TMDL) requirements. The SWRCB and RWQCBs have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to develop TMDL requirements.

National Flood Insurance Act

FEMA is responsible for managing the National Flood Insurance Program (NFIP), which makes federally-backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. The NFIP, established in 1968 under the National Flood Insurance Act, requires that participating communities adopt certain minimum floodplain management standards, including restrictions on new development in designated floodways, a requirement that new structures in the 100-year flood zone be elevated to or above the 100-year flood level (known as base flood elevation), and a requirement that subdivisions be designed to minimize exposure to flood hazards.

To facilitate identifying areas with flood potential, FEMA has developed FIRMs that can be used for planning purposes, including floodplain management, flood insurance, and enforcement of mandatory flood insurance purchase requirements. Kern County is a participating jurisdiction in the NFIP and, therefore, all new development must comply with the minimum requirements of the NFIP.

State

Department of Water Resources

The major responsibilities of the California Department of Water Resources (DWR) include preparing and updating the California Water Plan to guide development and management of the state's water resources; planning, designing, constructing, operating, and maintaining the State Water Resources Development System; regulating dams; providing flood protection; assisting in emergency management to safeguard life and property; educating the public; and serving local water needs by providing technical assistance. In addition, DWR cooperates with local agencies on water resources investigations, supports watershed and river restoration programs, encourages water conservation, explores conjunctive use of ground and surface water, facilitates voluntary water transfers, and, when needed, operates a state drought water bank.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), passed in 1969, requires protection of water quality by appropriate designing, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The SWRCB is the primary State agency responsible for protecting the quality of the State's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility for implementing the Clean Water Act Sections 401 through 402 and 303(d) to the SWRCB and the nine RWQCBs.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (basin plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals. The basin plans are updated every 3 years. Compliance with basin plans is primarily achieved through implementation of the NPDES, which regulates waste discharges as discussed above.

The Porter-Cologne Water Quality Control Act requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the "waters of the State," file a report of waste discharge. Absent a potential effect on the quality of "waters of the State," no notification is required. However, the RWQCB encourages implementation of BMPs similar to those required for NPDES storm water permits to protect the water quality objectives and beneficial uses of local surface waters as provided in the Lahontan Region Water Quality Control Plan (Basin Plan) (RWQCB, 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 Judgment of adjudication for the Antelope Valley Groundwater basin was entered in December 2015. To administer the Judgment, the Court directed appointment of the Watermaster (a five-member board). In

2016, the Watermaster Board and an Advisory Committee were formed. The Board finalized the hiring of a Watermaster Engineer 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 and California DWR in accordance with SGMA (California Water Code section 10720.8). The first annual report to the Court was completed June 26, 2017 (Todd Groundwater, 2017).

Streambed Alteration Agreement (California Fish and Game Code)

California Fish and Game Code Section 1602 protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the California Department of Fish and Wildlife (CDFW) in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, and requires any person, state or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

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

During final engineering and design of a project, if it is determined that any project-related actions would have the potential to necessitate a streambed alteration agreement, such an agreement would be prepared and implemented prior to construction of the project, thus maintaining compliance with Section 1602 of the California Fish and Game Code. A streambed alteration agreement is required if the CDFW determines the activity could substantially adversely affect an existing fish and wildlife resource. The agreement includes measures to protect fish and wildlife resources while conducting the project. The CDFW must comply with CEQA before it may issue a final lake or streambed alteration agreement; therefore, the CDFW must wait for the lead agency to fully comply with CEQA before it may sign the draft lake or streambed alteration agreement, thereby making it final.

Local

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

Kern County General Plan

Land Use, Open Space, and Conservation Element

1.3 Physical and Environmental Constraints

Policies

Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2 [Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

Policy 8: Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.

Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.

Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.

Policy 11: Protect and maintain watershed integrity within Kern County.

Implementation Measures

Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.

Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.

Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.

Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

1.9 Resources

Policy

Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.

1.10 General Provisions

Implementation Measures

Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

1.10.6 Surface Water and Groundwater

Policies

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 40: Encourage utilization of community water system rather than the reliance on individual wells

Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.

Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

Implementation Measure

Measure Y: Promote efficient water use by utilizing measures such as:

(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.

Willow Springs Specific Plan

The entire project is subject to the provisions of the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in April 2008 and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Area. The hydrology and water quality-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project are outlined below (Kern County Department of Planning and Development Services 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included.

Public Facilities Element

Goal

Goal 3 To restrict, if possible, any further and/or unnecessary drawdown of the water table within the plan area.

Policy

Policy 21 The projects shall comply with all applicable Kern County code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.

Safety/Seismic Element

Goals

Goal 7 Minimize damage to public facilities and utilities, such as water and gas mains, electric, telephone, and sewer lines, streets, and bridges located in areas of special flood hazard.

Goal 9 Comply with the requirements of the National Flood Insurance Program Regulations, Parts 59 and 60 of Title 44 of the Code of Federal Regulations.

Policy

Policy 1 New development within the 100-year floodplain shall be regulated in accordance with the Floodplain Management Section of the Department of Planning and Development Services according to the Flood Damage Prevention Ordinance, the Kern Land Division Ordinance, and the Kern County Zoning Ordinance as may be amended from time to time.

Mitigation/Implementation Measures

Measure 3 Areas within the 100-year floodplain shall be zoned with the appropriate FPP, FP, or FPS designation.

Measure 4 New development within the 100-year floodplain shall be regulated in accordance with the Flood Damage Prevention Ordinance and the Kern County Zoning Ordinance as they may be amended from time to time.

Kern County Zoning Ordinance

Chapter 19.70 Floodplain Combining District

Section 19.70.040 prohibits uses including the following uses in the Floodplain Combining District, as applicable to the proposed project:

Implementation Measures

Measure B: All uses that will likely increase the flood hazard or affect the water-carrying capacity of the floodplain beyond the limits resulting from encroachment as specified in Section 19.70.130.

Measure C: Dumping, stockpiling, or storage of floatable substances or other materials which, in the opinion of the Kern County and Survey Services Department, will add to the debris loads of the stream or watercourse, unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with Section 19.70.130.

Measure D: Storage of junk or salvage operations.

Measure E: Oil storage tanks or processing equipment, unless flood-proofed or sufficiently elevated above the Base Flood Elevation, as determined by the Kern County Public Works Department.

Measure F: Individual sewage disposal systems (e.g., septic tank systems), unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with the requirements of the Kern County Health Department so as to minimize infiltration of floodwaters into the systems and discharges from the systems into the floodwaters.

Measure G: Sources of water supply (e.g., wells, springs) unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with the requirements of the Kern County Health Department so as to minimize infiltration of floodwaters.

Kern County Code of Building Regulations

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 work day during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

Kern County Floodplain Management Ordinance (17.48)

Any construction that takes place within areas of special flood hazards, areas of flood-related erosion hazards, and areas of mudslide (i.e., mudflow) hazards within the jurisdiction of unincorporated Kern County will comply with the requirements and construction design specifications of this ordinance. Any required development permits will be obtained prior to commencement of construction activities. Sections 17.48.250 through 17.48.350 of the ordinance elaborate on the standards of construction in the special flood hazards area.

Kern County Development Standards

The Kern County Development Standards apply to all developments within Kern County that are outside of incorporated cities. These standards establish minimum design and construction requirements that will result in improvements that are economical to maintain and will adequately serve the general public. The requirements set forth in these standards are considered minimum design standards and will require the approval of the entity that will maintain the facilities to be constructed prior to approval by the County.

Kern County Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the project proponent to provide background information on construction activities. Project proponents must apply for the permit under one of the following four conditions:

1. All storm water is retained onsite and no storm water runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.
2. All storm water runoff is not retained on site, but does not discharge to a Water of the United States (i.e., drains to a terminal drainage facility). Therefore, a SWPPP has been developed and BMPs must be implemented.
3. All storm water runoff is not retained on site, and the discharge is to a Water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control

Board prior to issuance of the building permit. Also, a SWPPP has been developed and BMPs must be implemented.

4. Construction activity is between 1 to 5 acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

Kern County – 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 project (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 land owners 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 if groundwater is utilized.

4.10.4 Impacts and Mitigation Measures

Methodology

This section analyzes impacts on hydrology and water quality from the implementation of the project based on changes to the environmental setting as described above, identified drainage conditions in the project site, and the current regulatory framework. The project's potential impacts to hydrology and water quality have been evaluated using the Geotechnical Engineering Reports (Terracon, 2019 and Terracon, 2020a and 2020b, Preliminary Drainage Study (Wallace Group, 2019), and the Water Supply Assessment (AECOM, 2020) prepared for the project, located in Appendices H, K and L of this EIR, respectively. As well as a variety of resources, including multiple online sources and published documents. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project could have a have a significant impact on hydrology and water quality if it would:

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would

    i. Result in substantial erosion or siltation onsite or offsite;

    ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

    iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

    iv. Impede or redirect flood flows;

d. Result in a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation;

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Project Impacts

Impact 4.10-1: The project would violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality.

Construction

Project construction would include mowing, excavation, and grading portions of the project site. Conventional grading would be performed selectively throughout the project site. However, because the project area is relatively flat, it is anticipated that grading would be limited in most areas. Grading and excavation would also be required for the proposed foundations of the operation and maintenance (O&M) Building(s) and other infrastructure such as the energy storage system, inverters and transformers for each other solar facility sites (Chaparral and Rabbitbrush Solar Facilities). Installation of the solar panels would not require grading of the site with the exception of roads to meet fire code standards. These activities would affect current drainage patterns and erosion on the project site; however, designing the site grading and access roads in compliance with County standards would prevent substantial alterations to drainage patterns and erosion within the project site. Impervious surfaces from construction of access roads, PV module foundations, substations, and other improvements would be relatively limited compared to the overall perviousness of the remaining 1,406-acre project area.

Potential impacts on water quality from erosion and sedimentation are expected to be localized and temporary during construction. Stormwater runoff from the project site would not discharge to waters of the United States since the project area is within a watershed that is not hydrologically connected to a navigable waterway. However, 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, according to the Kern County Engineering, Surveying, and Permit Services Department NPDES applicability form, the project would be required to implement a SWPPP during construction. Per Mitigation Measure MM 4.10-1, the SWPPP would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality, and would be applicable to all areas of the project, including the solar fields and the gen-tie line. In addition, prior to the commencement of construction activities, the project proponent would be required to adhere to the requirements of the Kern County Grading Code. This includes implementation of various measures designed to prevent erosion and control drainage onsite, thereby further preventing the potential sedimentation and subsequent degradation of stormwater.

During project construction, any activity that results in the accidental release of hazardous or potentially hazardous materials could result in water quality degradation. Further, any construction activity that results in the accidental release of pollutants, hazardous or potentially hazardous materials could result in water quality degradation. Materials that could contribute to this impact include, but are not limited to, diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, cement slurry, and other fluids utilized by construction and maintenance vehicles and equipment. Motorized equipment could leak hazardous materials such as motor oil, transmission fluid, or antifreeze due to inadequate or improper maintenance, unnoticed or unrepaired damage, improper refueling, or operator error.

As noted in Section 4.9, *Hazards and Hazardous Materials*, of this EIR, Mitigation Measure MM 4.9-1 would require the project proponent to provide a Hazardous Materials Business Plan that would delineate hazardous material and hazardous waste storage areas; describe proper handling, storage, transport, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; and establish public and agency notification procedures for spills and other emergencies, including fires. Therefore, with implementation of Mitigation Measures MM 4.10-1 and MM 4.9-1, impacts to water quality would be less than significant during construction.

Operation

The solar facilities would require limited use of certain hazardous materials for routine operations and maintenance. Accidental release of such materials could include fuels, paints, coatings, lubricants, and transformer oil, which would result in water quality degradation should the materials become entrained in stormwater. This would result in a potentially significant impact on water quality. However, as described above, implementation of Mitigation Measure MM 4.9-1 would require the implementation of a Hazardous Materials Business Plan that would ensure safe handling of hazardous materials onsite and provide the means for prompt cleanup in the event of an accidental hazardous material release. There would be no hazardous materials associated with the interconnections to the gen-tie lines.

Water quality could also be degraded by non-hazardous materials during operation activities. During dry periods, impervious surfaces (i.e., hardscape surfaces such as foundations and buildings) can collect greases, oils, and other vehicle-related pollutants. During storm events, these pollutants can mix with stormwater and degrade water quality. However, per Mitigation Measure MM 4.10-1, a drainage plan would be prepared in accordance with the Kern County Development Standards and Kern County Code of Building Regulations. Therefore, the drainage plan would include post-construction structural and nonstructural BMPs that could include features such as drainage swales for collection of runoff prior to offsite discharge. Adherence to these requirements would minimize potential for operation period water quality degradation. Apart from infrequent cleaning of panels with water that would result in minimal runoff, no other discharges would occur when the project is operational. Therefore, with the implementation of Mitigation Measures MM 4.9-1 and MM 4.10-1, project operation would not violate water quality standards or waste discharge requirements, or otherwise degrade water quality.

Mitigation Measure

Implement Mitigation Measure MM 4.9-1.

MM 4.10-1: Prior to issuance of a grading permit, the project proponent/operator shall submit a Stormwater Pollution Prevention Plan (SWPPP) for review and approval by the Kern County Planning and Natural Resources Department and/or Kern County Public Works Department. The SWPPP shall be designed to minimize runoff and shall specify best management practices to prevent all construction pollutants from contacting stormwater, with the intent of keeping sediment or any other pollutants from moving offsite and into receiving waters. The requirements of the SWPPP shall be incorporated into design specifications and construction contracts. Recommended best management practices to be incorporated in the SWPPP may include the following:

a. Minimization of vegetation removal;

b. Implementing sediment controls, including silt fences a necessary;

c. Installation of a stabilized construction entrance/exit and stabilization of disturbed areas;

d. Properly containing and disposing of hazardous materials used for construction onsite;

e. Properly covering stockpiled soils to prevent wind erosion;

f. Proper protections and containment for fueling and maintenance of equipment and vehicles; and

g. Appropriate disposal of demolition debris, concrete and soil, and aggressively controlling litter.

h. Cleanup of silt and mud on adjacent street due to construction activity.

i. Checking all lined and unlined ditches after each rainfall.

j. Restore all erosion control devices to working order to the satisfaction of the Kern County Planning and Natural Resources Department and/or Kern County Public Works Department after each rainfall run-off.

k. Install additional erosion control measures as may be required due to uncompleted grading operations or unforeseen circumstances which may arise.

MM 4.10-2: Prior to the issuance of a grading permit, the project proponent/operator shall complete a hydrologic study and final drainage plan designed to evaluate and minimize potential increases in runoff from the project site. The study shall include, but is not limited to the following:

a. A numerical stormwater model for the project site that evaluates existing and proposed (with project) drainage conditions during storm events ranging up to the 100-year event.

b. The study shall also consider potential for erosion and sedimentation in light of modeled changes in stormwater flow across the project area that would result from project implementation.

c. Engineering recommendations to be incorporated into the project design and applied within the site boundary. Engineering recommendations will include measures to offset increases in stormwater runoff that would result from the project, as well as implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding onsite or offsite.

d. A specification that the final design of the solar arrays shall include one foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Solar panel sites located within a 100-year floodplain shall be graded to direct potential flood waters without increasing the water surface elevations more than one foot or as required by Kern County's Floodplain Management Ordinance.

e. The hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code and Kern County Development Standards, and approved by the Kern County Public Works Department prior to the issuance of grading permits.

Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.9-1, MM 4.10-1, and MM 4.10-2 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 Chaparral and Rabbitbrush Solar Facilities are primarily located on undeveloped lands (with the exception of two residences and residential accessory structures) that currently do not have a water demand. Construction of the project is anticipated to use approximately 300 AF of water from each of the two project sites for a total of 600 AF over the construction period of approximately 12 months, and the project's operational water requirements is expected to be approximately 20 AFY. Water supply needed for both construction and operation is expected to be either from new and/or existing wells on each individual project site, existing wells on the Willow Springs Solar project site, or from water trucked from the AVEK. According to the Water Supply Assessment prepared for the project, groundwater rights were allocated by the Antelope Valley Watermaster and the resources are sufficient to meet the project demands. However, the Basin is in a designated state of overdraft. Per Mitigation Measure MM 4.10-1, the project proponent would be required to comply with any restrictions that might result from the Watermaster's oversight of the basin and compliance with the Basin Adjudication Judgement.

The project would result in an increase in impervious surfaces on the site from the equipment foundations as well as the operations and maintenance buildings and energy storage facilities. The access roads could also increase impervious surface areas if paved or compacted gravel base is effectively impervious. Although the panels and panel foundations are impervious, stormwater falling on the panels would drip off and infiltrate into the surrounding pervious ground surfaces. Otherwise, even if the access roads are paved, the majority of the site would remain pervious and thus would not substantively interfere with groundwater recharge. Therefore, the project would leave large areas of pervious surfaces intact that would continue to absorb stormwater runoff and would thus not result in a significant reduction of groundwater infiltration rates. The project would have a less than significant impact on groundwater supplies related to groundwater recharge at the site.

Mitigation Measures

Implement Mitigation Measure MM 4.10-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

Impact 4.10-3: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner than would result in substantial erosion and/or sedimentation on-site or off-site.

Site drainage is characterized by shallow sheet flow conditions, with significant well-defined channels in the steeper, more rolling areas of the Chaparral and Rabbitbrush sites, which disperse back to into sheet flow conditions on each of the solar facility sites (Wallace Group, 2019). Required grading activities for the proposed project would alter existing onsite drainage patterns and flowpaths, and could alter the way that stormwater flows onsite during major events. These changes could concentrate flows and thus result in increased erosion of existing soils onsite and subsequent sedimentation downstream. Further, the impervious surfaces introduced to the site due to development of the project would generate additional stormwater runoff on site, which could exacerbate potential erosion and sedimentation on site or downstream.

The project would include limited grading such that off-site flow that enters the site would continue to flow through the site much as it does currently. However, installation of the proposed facilities discussed in Chapter 3, *Project Description*, of this EIR could alter existing on-site drainage patterns and flowpaths to some degree and could alter the way that stormwater from upgradient flows across the project site during major events. Given the unconsolidated and erosive nature of soils within the project area and its vicinity, these changes could result in increased erosion on site. Additionally, if the project controls stormwater 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 project would generate additional stormwater runoff on site. This could exacerbate potential erosion and sedimentation on site or downstream.

As described above, the project would implement a SWPPP per Mitigation Measure MM 4.10-1 that would require preservation of existing vegetation and topography to the maximum extent feasible, as well as include erosion and sediment control BMPs designed to prevent erosion and sedimentation from occurring during project construction. Compliance with the Kern County Grading Ordinance is also required, which requires erosion prevention measures. With regard to erosion and sedimentation during project operation caused by increased runoff from impervious surfaces, large amounts of pervious ground surface would remain during project operation that would continue to absorb the majority of surface flows. Further, Mitigation Measure MM 4.10-2 requires the completion of a hydrologic study and final drainage plan for the proposed project prior to the issuance of a grading permit; the plan would demonstrate that the project site has been designed to minimize potential increases in runoff. Minimization of runoff increases could require inclusion of a retention basin onsite to capture high storm flows. Any stormwater management features would be consistent with existing regulatory requirements and would minimize any erosion or sedimentation to less than significant levels. With implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2, impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM 4.10-1 and MM 4.10-2.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2, impacts would be less than significant.

Impact 4.10-4: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would result in flooding onsite or offsite.

As discussed under Impact 4.10-3 above, grading and installation of project facilities would alter existing onsite drainage patterns and flowpaths. This could cause localized flooding during major events along the margins of the project area, or within the project area, depending upon how stormwater is managed under final project design. During operation of the project, large amounts of pervious ground surface would remain onsite that would continue to absorb the majority of surface flows. In addition, Mitigation Measure MM 4.10-2 would require the preparation of a final hydrologic study and drainage plan prior to issuance of a grading permit that would detail the design and implementation of any necessary stormwater control features to onsite that would ensure runoff is not substantially increased by the proposed facilities. Mitigation Measure MM 4.10-2 would also require that grading for the project facilities does not alter the ground surface such that the extent of flooding during flood events is substantially increased. Therefore, impacts related to flooding would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.10-2.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10 -2, impacts would be less than significant.

Impact 4.10-5: The project would create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

The project site is located in a remote, rural region with no existing or planned stormwater infrastructure. There are no existing stormwater drainage systems on the project site, and no stormwater drainage systems are proposed as part of the project. The project would be required to adhere to Kern County Public Works Department storm water requirements, which include measures to address stormwater controls on both management of runoff volume and water quality, including controlling erosion and protection of water quality of stormwater runoff. As described above under Impact 4.10-4, a large amount of pervious surfaces would surround the proposed facilities that would continue to absorb runoff thus allowing infiltration of the runoff produced by the new minor impervious surfaces. Further, the drainage plan required by Mitigation Measure MM 4.10-2 would detail any necessary design features required to properly control stormwater runoff onsite; design features would be appropriately sized for storm events per the final hydrology study performed for the site. Impacts related to storm water drainage systems would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure MM 4.10-2 would be required.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-2, impacts would be less than significant.

Impact 4.10-6: The project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.

Both of the project sites are located within a 100-year flood zone (Wallace Group, 2019). The project would introduce structures on the project sites such as the O&M Building(s) that could impede or redirect flood flows. However, most of the improvements of the project consist of solar panels, mounted on steel support posts which spread out across the project site and would not be expected to impede or redirect flood flows. Additionally, implementation of Mitigation Measure MM 4.10-2 would require preparation of a drainage plan that would design project facilities to have one-foot of freeboard clearance above the 100-year flood depths for the solar arrays or the finished floor of any permanent structures, in accordance with Kern County design standards. Per Mitigation Measure MM 4.10-2, grading for the project would be designed so that water surface elevations during flood events would not be increased by more than one foot. Therefore, impacts related to flooding would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.10-2.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-2, impacts would be less than significant.

Impact 4.10-7: The project would result in a flood hazard, tsunami, or seiche zone, and risk release of pollutants due to project inundation.

As described above, the project site, which includes the Chaparral and Rabbitbrush Solar Facilities, are located within a 100-year flood zone (Wallace Group, 2019). As noted above, implementation of the drainage plan required by Mitigation Measure MM 4.10-2 would ensure that improvements that would include the storage of hazardous materials would be required to have at least one foot of freeboard above the calculated flood depth. As discussed more thoroughly in Section 4.9, *Hazards and Hazardous Materials*, the project would not include the use, storage, or disposal of significant quantities of hazardous materials. In addition, the project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards. Therefore, considering the limited area of the site that is in the flood hazard area, the limited amount of storage of hazardous materials at the site, and with the implementation of the drainage plan required by Mitigation Measure MM 4.10-2, which would provide flood protection measures, the potential for release of pollutants due to project inundation would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.10-2.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-2, impacts would be less than significant.

Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

As noted above, the project site is located within the South Lahontan RWQCB and is subject to the applicable requirements of the Basin Plan administered by the RWQCB in accordance with the Porter-Cologne Water Quality Control Act. The proposed project is not subject to a sustainable groundwater management plan 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 is under existing adjudication. As discussed above, the project would include required BMPs and drainage control requirements that would be consistent with the Basin Plan.

As noted above, 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 most recent of which was published in 2018 for the 2017 water year. The project would require water for construction and operation phases that is expected to be either from new and/or existing wells on each individual project site, existing wells on the Willow Springs Solar project site, or from water trucked from the AVEK. According to the Water Supply Assessment prepared for the project, groundwater rights were allocated by the Antelope Valley Watermaster and the resources are sufficient to meet the project demands. Therefore, the project would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, of this EIR, there are approximately 117 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, and an additional 28 cumulative projects proposed throughout Lancaster, Palmdale, and Unincorporated Los Angeles County. All projects excluding the 350 MW solar facility are located within the Antelope Valley HU and Antelope Valley Groundwater Basin. All projects except for those in Lancaster, Palmdale, and Unincorporated Los Angeles County are located within the Antelope Valley Hydrologic Unit and AVGB.

Similar to the proposed project, all cumulative projects would not discharge to waters of the United States due to their location within the Antelope Valley, which is a closed basin with no outlet to the Pacific Ocean. Regardless, Mitigation Measure MM 4.10-1 would require the project to prepare and implement a SWPPP in accordance with County requirements. Similarly, all projects that would not retain all runoff onsite would be required to prepare a SWPPP, which would include BMPs designed to prevent the mixture of sediment and other pollutants with stormwater and degrading water quality. Furthermore, the proposed project would implement a Hazardous Materials Business Plan as part of Mitigation Measure MM 4.9-1 that would require appropriate handling of hazardous materials onsite to ensure they do not come into contact with stormwater and affect water quality. All other projects in the vicinity that would handle hazardous materials would be required to comply with hazardous material regulations. Therefore, cumulative scenario impacts associated with water quality degradation would not be cumulatively considerable, and the project would not contribute to a cumulative impact on water quality.

With regard to water supply, the proposed project would obtain its water supply from the AVGB. The Basin is in a state of overdraft. The Water Supply Assessment determined that there are sufficient supplies for both proposed project construction and operation. The project's use of water would be highest during construction which is still much less than the current water demand associated with the existing agricultural use. Therefore, the project's water use, in combination with other cumulative scenario projects requiring water from the Antelope Valley Groundwater Basin would be less than significant.

With respect to erosion, drainage, and flooding, the project would implement Mitigation Measure MM 4.10-2, which would minimize direct impacts on erosion, drainage, and flooding. It is anticipated that other cumulative scenario projects would be required to implement similar measures, in order to minimize erosion, drainage, and flooding related impacts. Additionally, drainage related impacts from cumulative scenario projects would be primarily localized. Therefore, cumulative scenario impacts on erosion, drainage, and flooding are not anticipated to be cumulatively considerable, and the project would not contribute to a cumulative impact on flooding, erosion, or drainage.

Mitigation Measures

Implement Mitigation Measures MM 4.9-1, MM 4.10-1, and MM 4.10-2.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1, MM 4.10-1, and MM 4.10-2 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 describes the affected environment and regulatory setting of the project for impacts that may affect land use and planning. It also describes the environmental and regulatory setting and discusses the need for mitigation measures where applicable. The information in this section is based primarily, but not exclusively, on a review of the project's consistency with the Kern County General Plan, the Willow Springs Specific Plan, and the Kern County Zoning Ordinance.

4.11.2 Environmental Setting

Onsite Land Uses

The proposed project is located on approximately 1,406 acres of undeveloped (with the exception of two residences and residential accessory structures), privately owned land located in the western extent of the Mojave Desert, approximately 5.5 miles west of the unincorporated community of Rosamond, California. Development in the area surrounding the project sites include rural residences, agriculture, as well as renewable energy (solar and wind) facilities. The project site is located within the administrative boundaries of the Willow Springs Specific Plan. Further, the project is subject to the provisions of the Kern County Zoning Ordinance. The project site is not located within the boundaries of an Airport Influence Area as identified in the Kern County Airport Land Use Compatibility Plan (ALUCP). The closest airport to the Chaparral and Rabbitbrush Solar Facilities is Lloyd's Landing, a private airport approximately 2 miles northeast of the project site. There are two existing residences and residential accessory structures on the project site. The existing residences and residential accessory structures are proposed to be demolished and removed, or to remain and be repurposed as O&M Building(s) (for the Facility respective to their location) in compliance with applicable Kern County Building Code requirements.

As shown in **Table 4.11-1**, *Project Site and Surrounding Land Use Designations and Zoning Classifications,* below, the project site is located within unincorporated Kern County and within the administrative boundaries of both the Kern County General Plan and the Willow Springs Specific Plan. Within both the Willow Springs Specific Plan and the Kern County General Plan, the project site's land use designation is Map Code(s) 5.3/4.4 (Maximum 10 units/net acre/Comprehensive Planning Area), 5.3/4.4/2.1 (Maximum 10 units/net acre/Comprehensive Planning Area/Seismic Hazard), 5.6 (Minimum 2.5 gross acres/unit), 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 6.2 (General Commercial), and 8.5 (Resources Management (Minimum 20-acre parcel size)).

As shown in **Table 4.11-1**, *Project Site and Surrounding Land Use Designations and Zoning Classifications,* below, the project site's zoning classification is A FPS (Exclusive Agriculture - Floodplain Secondary Combining), A GH FPS (Exclusive Agriculture – Geologic Hazard Combining – Floodplain Secondary Combining), E(2½) RS FPS (Estate (2½ acres) – Residential Suburban Combining – Floodplain Secondary Combining), E(5) RS FPS (Estate (5 acres) – Residential Suburban Combining – Floodplain

Secondary Combining), and E(10) RS FPS (Estate 10 acres – Residential Suburban Combining - Floodplain Secondary Combining) Willow Springs Specific Plan Zone Districts.

TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USE DESIGNATION AND ZONING CLASSIFICATIONS

	Existing Land Use	Existing Map Code Designation	Existing Zoning Classification
Chaparral Facility Site	Undeveloped, residential dwelling	5.3/4.4, 5.3/4.4/2.1, 5.6, 6.2	A FPS, A GH FPS, E(2 ½) RS FPS
North	Undeveloped	5.3/4.4, 5.3/4.4/2.1, 5.6/2.1	A FPS, A GH FPS
South	Solar facility, undeveloped	3.3, 5.3, 5.6	A FPS, E (2 ½) RS FPS
East	Undeveloped, sparse residential dwellings	3.3, 5.3/4.4, 5.6	A FPS, E (2 ½) RS FPS
West	Undeveloped	5.3/4.4, 5.3/4.4/2.1, 5.6, 8.5, 8.5/2.1	A FPS, E (2 ½) RS FPS
Rabbitbrush Facility Site	Undeveloped, residential dwellings	5.3/4.4, 5.6, 5.7, 5.75, 8.5	A FPS, E (2 ½) RS FPS, E (5) RS FPS, E (10) RS FPS
North	Undeveloped	5.7, 5.75, 8.5	A FPS, GH FPS, E (10) RS FPS
South	Solar facility	5.3, 5.3/4.4	A FPS
East	Undeveloped, sparse residential dwellings	5.3/4.4, 5.6, 5.7	E (2 ½) RS FPS, E (5) RS FPS
West	Undeveloped, sparse residential dwellings, solar facility	5.3, 5.75	A FPS, E (10) RS FPS

Legend

- 5.3/4.4 (Maximum 10 units/net acre/ Comprehensive Planning Area)
- 5.3/4.4/2.1 (Maximum 10 units/net acre/ Comprehensive Planning Area/ Seismic Hazard)
- 5.6 (Minimum 2.5 gross acres/unit)
- 5.7 (Minimum 5 gross acres/unit)
- 5.75 (Minimum 10 gross acres/unit)
- 6.2 (General Commercial)
- 8.5 (Resources Management (Minimum 20-acre parcel size))

- A (Exclusive Agriculture)
- E(2½) (Estate 2½ Acres)
- E(5) (Estate 5 Acres)
- E(10) (Estate 10 Acres)
- FPS (Floodplain Secondary Combining)
- GH (Geologic Hazard Combining

SOURCE: Kern County, 2019

Surrounding Land Uses

The proposed project is located in the western extent of the Mojave Desert, approximately 5.5 miles west of the unincorporated community of Rosamond, California. 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, scattered single-family homes, and other solar energy development. Existing development in the project vicinity includes rural access roads, scattered rural residences, producing and non-producing water wells, off-highway vehicle use, cattle ranching and maintenance facilities, mining, wind and solar energy, and meteorological towers. A portion of the Pacific Crest Trail (PCT) is approximately 4.5 miles west of the project site. The Rosamond Skypark is located approximately 5.5 miles east of the project site.

Surrounding land uses are classified 3.3 (Other Facilities), 4.4 (Comprehensive Planning Area), 5.3 (Maximum 10 units/net acre), 5.5 (Maximum 1 unit/net acre), 5.6 (Minimum 2.5 gross acres/unit), 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 6.2 (General Commercial), 7.1 (Light Industrial, 7.2 (Service Industrial, 8.1 (Intensive Agriculture, Minimum 20-acre parcel size), 8.5 (Resources Management, Minimum 20-acre parcel size), and includes the following overlays: 2.1 (Seismic Hazard Overlay), 2.8 (Military Flight Operations [60dB] Overlay), and 2.85 (Noise Management Area [65dB] Overlay).

Surrounding land uses are located within the zoning designations of A (Exclusive Agriculture), E(2½) (Estate 2½ Acres), E(5) (Estate 5 acres), E(10) (Estate 10 acres) Zone Districts, and include combining districts FPS (Floodplain Secondary Combining) and GH (Geologic Hazard Combining).

4.11.3 Regulatory Setting

Federal and State

The Desert Renewable Energy Conservation Plan

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), BLM, and the U.S. Fish and Wildlife Service in September 2014. The Commission manages approximately 340,533 acres of school lands.

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 Resource 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 FLPMA 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.

Local

Land use and planning decisions within and adjacent to the project site are guided and regulated by the Kern County General Plan, Willow Springs Specific Plan and Kern County Zoning Ordinance. The Kern

County General Plan and Willow Springs Specific Plan contains goals, objectives, and policies and provides an overall foundation for establishing land use patterns. For this land use impact analysis, this section lists all relevant goals, objectives, policies, and implementation measures related to the proposed project. The Zoning Ordinance contains regulations through which the General Plan's provisions are implemented. The most relevant regulations pertaining to solar energy development are presented below.

Kern County General Plan

The Kern County General Plan is a policy document designed to provide long-range guidance for planning decisions that affect the growth and resources of unincorporated Kern County. Included in the Kern County General Plan is the Land Use, Open Space, and Conservation Element, which provides for a variety of land uses for future economic growth while also assuring the conservation of Kern County's agricultural, natural, and resource attributes (County of Kern, 2009). Within the Land Use, Open Space and Conservation Element, policy areas are separated by overlay designations, known as "Map Codes", which are identified on the Kern County General Plan maps for each section of the County and include the following categories: (1) non-jurisdictional land (State and federal); (2) environmental constraints overlay; (3) public facilities; (4) non-jurisdictional land (accepted county plan areas, rural communities and specific plan required); (5) residential; (6) commercial; (7) industrial; and (8) resource. Each Map Code/overlay area contains specific goals, policies, and implementation measures to guide development within them.

As discussed above, the project site is located within both the Willow Springs Specific Plan and the Kern County General Plan and includes the following land use designations: Map Code(s) 5.3/4.4 (Maximum 10 units/net acre/Comprehensive Planning Area), 5.3/4.4/2.1 (Maximum 10 units/net acre/Comprehensive Planning Area/Seismic Hazard), 5.6 (Minimum 2.5 gross acres/unit), 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 6.2 (General Commercial), and 8.5 (Resources Management (Minimum 20-acre parcel size)). Each Map Code/overlay area contains specific goals, policies, and implementation measures to guide development within them.

In addition to the Land Use, Open Space, and Conservation Element, the Kern County General Plan includes other elements related to circulation, noise, and energy. Each element establishes goals, policies, and implementation measures that guide planning decisions in unincorporated Kern County. The goals, policies, and implementation measures relevant to the 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 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.

Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.

Policy 11: Protect and maintain watershed integrity within Kern County.

Implementation Measures

Measure D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.

Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.

Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.

Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.

Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

1.4 Public Facilities and Services

Goals

Goal 1: Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.

Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.

Policies

Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.

Policy 6: The County will ensure adequate fire protection to all Kern County residents.

Policy 7: The County will ensure adequate police protection to all Kern County residents.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the CEQA documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Implementation Measures

Measure B: Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.

Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

Measure D: Involve utility providers in the land use and zoning review process.

Measure 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 3: To ensure that the development of resource areas minimizes effects of neighboring resource lands.

Goal 5: Conserve prime agricultural lands from premature conversion.

Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

Policies

Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.

Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.

Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.

Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.

Implementation Measures

Measure F: Prime agricultural lands, according to the Kern County Interim-Important Farmland 2000 map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.

1.10 General Provisions

Goal

Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

1.10.1 Public Services and Facilities

Policies

Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Implementation Measures

Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

Measure D: Involve utility providers in the land use and zoning review process.

Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the

County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

1.10.2 Air Quality

Policies

Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.

Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:

(1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and

(2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.

Policy 21: The County shall support air districts efforts to reduce PM10 and PM2.5 emissions.

Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, state, and local standards.

Implementation Measures

Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.

Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:

a. Minimizing idling time.

b. Electrical overnight plug-ins.

Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:

a. Pave dirt roads within the development.

b. Pave outside storage areas.

c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.

d. Use of alternative fuel fleet vehicles or hybrid vehicles.

e. Use of emission control devices on diesel equipment.

f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.

g. Provide bicycle lockers and shower facilities on site.

h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).

i. The use and development of park and ride facilities in outlying areas.

j. Other strategies that may be recommended by the local Air Pollution Control Districts.

Measure J: The County should include PM10 control measures as conditions of approval for subdivision maps, site plans, and grading permits.

1.10.3 Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures

Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.

Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Measure N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

1.10.5 Threatened and Endangered Species

Policies

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.

Policy 28: County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.

Policy 29: The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

Policy 31: Under the provisions of the California Environmental Quality Act, the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document is prepared.

Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measures

Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA.

Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.

1.10.6 Surface Water and Groundwater

Policies

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.

Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.

Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.

Implementation Measure

Measure Y: Promote efficient water use by utilizing measures such as: (i) Requiring water-conserving design and equipment in new construction; (ii) Encouraging water-conserving landscaping and irrigation methods; and (iii) Encouraging the retrofitting of existing development with water conserving devices.

1.10.7. Light and Glare

Policies

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

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

Implementation Measure

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

Chapter 2. Circulation Element

2.1 Introduction

Goals

Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.

Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the County.

2.3.3 Highway Plan

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 standards are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.

- Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;
- Arterial [Major Highway] Minimum 110-foot right-of-way;
- Collector [Secondary Highway] Minimum 90-foot right-of-way;
- Commercial-Industrial Street Minimum 60-foot right-of-way; and
- Local Street [Select Local Road] Minimum 60-foot right-of-way.

Implementation Measure

Measure A: The Planning Department shall carry out the road network Policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. Planning Department can help developers and property owners in identifying where planned circulation is to occur.

2.3.4 Future Growth

Goal

Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

Policies

Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below Level of Service (LOS) D. Utilization of the CEQA process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.

Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along State routes are necessary then roads shall be built to Caltrans standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.

Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.

Policy 6: The County may accept a developer's road into the county's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.

Implementation Measure

Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards. 2.3.6 Vacation of Existing or Recorded Future Streets, Highways, or Public Easements.

2.3.6 Vacation of Existing or Recorded Future Streets, Highways, or Public Easements

Goal

Goal 1: Provide a means for guiding decisions on vacating public roads.

Policies

Policy 1: A road vacation influencing the construction or operation of expressway, an arterials or collector highway may occur with, or after, amending this Element. Kern County will not vacate any public expressway, arterial or collector highway right-of-way without amendment to this Element. The County will need to amend the right-of way status to local or commercial-industrial streets.

Policy 2: A study, prepared at the applicant's expense, shall accompany the road vacation application. The study should provide information that will aid in finding the importance of the entire length of the right-of-way. The study would include a review of existing and proposed land uses and localized traffic modeling. This will help Kern County decide what corresponding changes are needed to the Land Use, Open Space and Conservation Element, or affected specific plan. This also will help Kern County decide if additional public road services or other traffic management are required elsewhere.

Policy 3: If the road vacation applicant is a private entity, all costs for the public hearing shall be borne by the applicant. Also, costs associated with providing any necessary additional public road services or other traffic management caused by the road vacation shall be paid by the applicant.

Policy 4: The vacation of a road shall not take away legal access to adjacent properties or "land-lock" any legal lot or parcel of record. Legal access shall be determined through a report submitted with the application for road vacation.

Policy 5: If Kern County determines that the right-of-way is not needed for circulation in the general area, a road vacation may be authorized. An acceptable project shall be determined through a report submitted with the road vacation application and in keeping with traffic modeling parameters of this Plan.

Policy 6: A road vacation may be authorized if physical conditions such as natural, or manmade topography prevent rational extension of the facility. Physical conditions affecting roadways shall be determined through a report submitted with the road vacation application.

Policy 7: A road vacation shall only affect public, recorded rights-of-way or public service easements. The potential effects of a road vacation upon rights-of-way and easements are to be determined by a report submitted with the road vacation application. A vacation of private access or private service easement is not under County jurisdiction. Kern County considers these matters "civil" actions. These civil actions should be acted upon accordingly.

Policy 8: A road vacation may be authorized if the right-of-way is not improved or used for its original purpose. Existing improvements and facility use shall be determined by a report submitted with the road vacation application.

Policy 9: A road vacation may be authorized to remove excess right-of-way caused by relocation, or at the beginning of a general plan amendment proceeding. Excess right-of-way shall be determined through a report submitted with the road vacation application.

Policy 10: A road vacation may be approved if there is an agreement to close a public street. A road vacation may be approved with acknowledgment of an impassable street. A road vacation may be approved with a land division map over the area of vacation if the project has comparable methods of vehicular access.

Policy 11: A road vacation procedure may be used for considering public service easement or utility service easement abandonments. The procedure is the same as any public right-of-way vacation.

Policy 12: A vacation of improved road right-of-way, or public service easement, should not occur until the lead agency makes findings. One important finding is the land is no longer needed for public use. A vacation of improved road right-of-way, or public service easement, should not occur until the right-of-way is superseded by relocation, and improved to acceptable Kern County Development standards. The Board of Supervisors shall have accepted the replacement facility into the maintained road system.

Policy 13: A general vacation proceeding (consistent with State of California Streets and Highway Code) will require a public hearing when the vacation affects existing in place facilities or is a project caused by relocating right-of-way.

Policy 14: A summary vacation shall be consistent with State of California Streets and Highway Code. A summary vacation may be used when the right-of-way does not exist, is unused, or moved. A summary vacation may be used where right-of-way is impassable, unnecessary for present or prospective public use, or is excess or public service easement land.

2.3.10 Congestion Management Programs

State law requires that urbanized counties (including Kern County) prepare an annual congestion management program (CMP). City and county eligibility for new gas tax subventions is contingent upon their participation in the congestion management program. To qualify for funding provided through the State Transportation Improvement Program (STIP) or the Federal Transportation Improvement Program (FTIP), the regional transportation agency must keep current a Regional Transportation Program (RTP) that contains the CMP. Also, the CMP offers local jurisdictions the opportunity to find cooperative solutions to the multi-jurisdictional problems of air pollution and traffic congestion.

The CMP has links with air quality requirements. The California Clean Air Act requires that cities and counties implement transportation control measures (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.

2.5.1 Trucks and Highways

The Kern County road network handles a high ratio of heavy truck traffic. State highways carry most of this traffic. Most of the trucks are interstate carriers. As such, interstate trucking is not under the direct control of County officials. In as much as this traffic affects County residents and taxpayers, they need actions to guarantee State highways in Kern County receive a fair share of California's transportation investment.

Goals

Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.

Goal 2: Reduce potential overweight trucks.

Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.

Policies

Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.

2.5.4 Transportation of Hazardous Materials

Goal

Goal 1: Reduce risk to public health from transportation of hazardous materials.

Policy

Policy 1: The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.

Chapter 3. Noise Element

3.3 Sensitive Noise Areas

Goals

Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.

Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policies

Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.

Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise

Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.

Policy 7: Employ the best available methods of noise control.

Implementation Measures

Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.

Measure C: Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.

Measure F: Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn}.

Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:

a) Be the responsibility of the applicant.

b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.

c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.

Measure I: Noise analyses shall include recommended mitigation, if required, and shall:

a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10 – 20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.

c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.

d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.

Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

Chapter 4. Safety Element

4.1 Introduction

Goal

Goal 1: Minimize injuries and loss of life and reduce property damage.

4.2 General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint

Implementation Measures

Measure A: All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisor's action could involve the establishment of a land use activity susceptible to such hazards.

Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.

4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure

Policy

Policy 1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

Implementation Measure

Measure B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.

Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.

4.5 Landslides, Subsidence, Seiche, and Liquefaction

Policies

Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

4.6 Wildland and Urban Fire

Policies

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measures

Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

4.9 Hazardous Materials

Implementation Measure

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Chapter 5. Energy Element

5.2 Importance of Energy to Kern County

Policies

Policy 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.

Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

5.4.5 Solar Energy Development

Goal

Goal 1: Encourage safe and orderly commercial solar development.

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Policy 4: The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species.

5.4.7 Transmission Lines

Goal

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

Policy

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

Willow Springs Specific Plan

The proposed project is subject to the provisions of the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in April 2008 and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Area. The boundary of the Willow Springs Specific Plan was determined by various requests for residential, commercial, and industrial land uses and resulted in an expansion of the original plan by an area of 5,760 acres. The result was a Specific Plan area encompassing 50,560 acres. This project is the largest Specific Plan area in Kern County. Included in the Willow Springs Specific Plan is the Land Use, Circulation, Housing, Noise, Seismic Safety and Safety Element, Scenic Highways Element, and Open Space and Conservation. Within the Land Use Element, the Willow Springs Specific Plan includes sections for generalized land use designations, which include non-jurisdictional, physical constraints, public facilities, special treatment areas, residential, commercial, industrial, and resource (County of Kern, 2008).

Each element establishes goals, policies, and implementation measures that guide planning decisions in the Willow Springs Specific Plan area. The goals, policies, and implementation measures relevant to the project are listed below.

Land Use Element

Policies

Policy 2: Encourage only those industries that do not significantly increase air pollution levels.

Policy 5: Encourage the maintenance of visual aesthetics in all new construction.

Policy 6: Require developers to clean up any identified hazardous waste sites prior to submittal of any land division or development project.

Policy 8: New and/or existing developments shall comply with the Kern County Zoning Ordinance and this Specific Plan. Where conflicts appear, the more restrictive requirements shall prevail.

Policy 10: Require that construction sites be provided with a soil retardant measure approved by the County of Kern (Department of Planning and Development Services and the Environmental Health Services Department) to reduce fugitive dust or blowing sand.

Policy 11: Retain vegetation until actual construction begins.

Resource

Goal

Goal 3: Encourage retention of productive agricultural and dormant mineral resources by imposing a restriction on allowing urban type land uses on nearby adjacent lands.

Policies

Policy 1: Provide a method encouraging the preservation of agricultural land.

Policy 2: Initial development within the Update area shall, when possible, be directed towards previously impacted areas (i.e., agricultural fields).

Policy 3: To ensure compliance with applicable State and federal laws and to protect the biological resources present in the Specific Plan area.

Mitigation/Implementation Measures

Measure 15: Where possible, project development within the Specific Plan Update area shall be designed to avoid displacement of destruction of Joshua tree habitat, to the satisfaction of the Kern County Agricultural Commissioner's Office. Areas adjacent to the woodland shall have a 50-foot setback from the Joshua tree plants. Within that setback, a native plant cover should be restored to natural habitat values to serve as a bugger, if such plant cover is not present.

Measure 16: A Joshua Tree Preservation and Transportation Plan shall be developed by the applicants for each parcel where Joshua trees are located on site. The plan shall be submitted to the Kern County Agricultural Commissioner's office for review and approval to grading permit issuance.

Measure 23: A Joshua Tree Preservation and/or Transplantation Plan shall be developed by applicants of discretionary projects for each parcel where Joshua trees are located on site. The plan shall be submitted to the Kern County Agricultural Commissioner for review and approval prior to grading permit issuance.

Measure 24: Prior to issuance of any grading permits for individual projects, individual project applicants shall consult with the Regional Water Quality Control Board, State Department of Fish and Game and/or U.S. Fish and Wildlife Service, and the Army Corps of Engineers

to identify potentially required permits. Compliance with this measure will be confirmed through the submittal of a letter (in conjunction with submittal of grading permit applications) to the County demonstrating compliance with the above-mentioned agencies.

Measure 25: Prior to issuance of grading permits, individual project applicants shall obtain appropriate permits as determined necessary by the Regional Water Quality Control Board, U.S. Fish and Wildlife Service, State Department of Fish and Game, and Army Corps of Engineers.

Air Quality Element

Goal

Goal 1: Imposition of appropriate mitigation measures to reduce where practical to do so, the effect short-term and long-term projects have on the area which involve grading activities, erosion controls, revegetation of disturbed sites, and provisions to introduce into the plan area a competitive job market to reduce travel times.

Policy

Policy 1: Compliance with the Mitigation/Implementation Measures and enactment of an approved Air Quality Attainment Plan.

Mitigation/Implementation Measures

Measure 1: To mitigate potential dust generation impacts, the Willow Springs Specific Plan Update project shall comply with applicable County regulations (to the satisfaction of the Kern County Air Pollution Control District), which require specific dust control measures.

Measure 2: During construction, all grading activities shall be ceased during periods of high winds (i.e., greater than 30 miles per hour [mph]). To assure compliance with this measure, grading activities are subject to periodic inspections by County staff.

Measure 3: Construction equipment shall be fitted with the most modern emission control devices and be kept in proper tune. Motors out of proper tune can result in emissions that vastly exceed recommended standards.

Measure 4: The project applicants shall, to the extent feasible, implement applicable control measures contained in the Attainment Plan in effect at the time of adoption of this Specific Plan, by the Air Pollution Control District in 1991. (See Environmental Impact Report Air Quality for additional recommended mitigation measures, page 162.).

Measure 7: All phases of the Willow Springs Specific Plan Update project shall comply with applicable rules and regulations of the Kern County Air Pollution Control District.

Biological Resources

Policies

Policy 1: Where possible, development shall be designated to avoid displacement of sensitive species.

Policy 2: Focused surveys shall be conducted by a County-approved biologist to establish the presence or absence of sensitive species.

Policy 3: Initial development within the area covered under the Willow Springs Specific Plan, when possible, will be directed towards previously impacted areas.

Cultural Resources

Goal

Goal 1: To preserve cultural resources contained on sensitive sites located within the Willow Springs Specific Plan area.

Policies

Policy 1: Archaeological investigations shall be required of specific properties proposed for development. These sites are identified in the Environmental Impact Report under Cultural Resources – Literature and Records Search, page 77, and are listed as: CA-KER-2819, 2820, 2821; CA-KER-522, 1969, 2592, 2593, 2599, 2595 and 2714; CA-KER-129, 273, 298, 302, 303. (Record on file Southern San Joaquin Valley Information Center in Bakersfield – California State University of Bakersfield. (2)

Policy 2: Recorded archaeological sites shall be subjected to individual studies prior to development.

Policy 15: Require cultural resources report for those areas with high probability for prehistoric activity prior to issuance of any grading permits.

Seismic Safety and Safety Element

Goals

Goal 7: Minimize damage to public facilities and utilities, such as water and gas mains, electric, telephone, and sewer lines, streets, and bridges located in areas of special flood hazard.

Goal 9: Comply with the requirements of the National Flood Insurance Program Regulations, Parts 59 and 60 of Title 44 of the Code of Federal Regulations.

Goal 15: To protect community residents from undue hazards and costs associated with road maintenance, slope instability, improper drainage, and inadequate sewage treatment.

Policies

Policy 1: New development within the 100-year floodplain shall be regulated in accordance with the Floodplain Management Section of the Department of Planning and Development Services according to the Flood Damage Prevention Ordinance, the Kern Land Division Ordinance, and the Kern County Zoning Ordinance as may be amended from time to time.

Policy 7: Compliance with site-specific issues, goals, policies, and implementation measures contained in the Seismic/Safety Element of the Kern County General Plan.

Policy 9: All new construction in the plan area shall comply with Chapter 23 of the Uniform Building Code (UBC), which includes building pad and foundation design standards for structures in UBC Seismic Zone IV.

Mitigation/Implementation Measures

Measure 3: Areas within the 100-year floodplain shall be zoned with the appropriate FPP, FP, or FPS designation.

Measure 4: New development within the 100-year floodplain shall be regulated in accordance with the Flood Damage Prevention Ordinance and the Kern County Zoning Ordinance as they may be amended from time to time.

Measure 24: In order to combat the stormwater pollution created by the various land uses the following source control mitigation measures are required:

a) Periodic cleaning (i.e., street sweeping) of paved areas to remove small particle size sediments with absorbed pollutants caused by uses of the area.

b) Utilize established Best Management Practices (BMPs) for small on-site control of urban runoff water quality. These measures include infiltration trenches, infiltration basins, water quality inlets, vegetative biofilter, grass swales, and porous pavement.

Public Facilities Element

Goal

Goal 3: To restrict, if possible, any further and/or unnecessary drawdown of the water table within the plan area.

Policies

Policy 2: In evaluating a development application, Kern County will consider both its physical and fiscal impact on the local school district and other public facilities. If it is found that the district or facilities involved will, as a result, require additional facilities or incur costs requiring additional local revenues, the development project will be required as a condition of approval to contribute funds to the district for the costs directly attributable to the project.

Policy 4: New development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

Mitigation/Implementation Measures

Measure 6: The siting and establishment of solid waste transfer stations, landfills, recycling center, and cleanup programs shall be in accordance with Kern County's Solid Waste Management Plan.

Measure 10: New development shall contribute its pro rata share for circulation improvements, school impact fees, park land dedications/fees, and possible biota impact fees. As additional impact fees are adopted, they shall be incorporated into the Specific Plan text.

Measure 11: The school district, along with the developer, shall provide Kern County with an alternative funding method, should an alternative be submitted with an impending development.

Measure 21: The projects shall comply with all applicable Kern County code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.

Measure 24: Consideration shall be given to implementation of the following measure to reduce the impacts associated with solid waste generation:

a) Compacting refuse would substantially reduce the number of refuse hauling trips and allow for more effective and sanitary disposal.

b) Each project applicant shall comply with guidelines set forth by Kern County in accordance with AB 939 which mandates recycling programs for each jurisdiction in California and shall agree to be subject to universal collection for one- to four-unit residential projects and commercial.

c) Where feasible, a community recycling center should be implemented to provide convenient recycling opportunities.

d) Studies shall be conducted by Kern County prior to issuance of building permits, to determine a feasible location for an alternate landfill upon reaching capacity at Mojave-Rosamond concurrent with development approvals. County should initiate studies to site alternative landfill.

e) Each project applicant shall comply with guidelines set forth by Kern County in accordance with AB 939 which mandates recycling programs for each jurisdiction in California and shall agree to be subject to universal collection for one- to four-unit residential projects and commercial.

Measure 25: The applicants are subject to school assessment fees pursuant to AB 2926.

Noise Element

Goals

Goal 2: To minimize disruption to the quality of life resulting from excessive noise.

Goal 3: To maintain reasonable noise level standards, consistent with the Kern County Noise Element.

Policies

Policy 1: Noise emissions from new development will be controlled and off-site levels limited to the standards of the Kern County General Plan Noise Element.

Policy 3: Land uses will be categorized in the following manner, and the noise level standards adopted in accordance with the Kern County Noise Element:

- **Sensitive Land Uses.** Noise level does not affect the successful operation of these particular activities. A wide variety of uses can be included in this category, including public utilities, transportation systems, and other noise-related uses.

- **Moderately Sensitive Land Uses**. Some degree of noise control must be present if these activities are to be successfully carried out. Included here are general business and recreational uses.
- **Sensitive Uses.** Lack of noise control will severely impact these uses, reducing the quality of life. This category primarily contains residential uses.
- **Highly Sensitive Uses.** A high degree of noise control is necessary for the successful operation of these activities. Examples include hospitals and churches.

Mitigation/Implementation Measures

Measure 2: The implementation measures of the Kern County Noise Element are hereby adopted by reference.

Circulation Element

Goals

Goal 5: To maintain public safety within the plan area by providing a more direct and efficient circulation system for law enforcement and fire protection vehicles.

Goal 7: To provide an adequate circulation system which will support the proposed land uses.

Policies

Policy 7: Require the widening of impacted roadways to handle increased traffic generated by new development.

Policy 8: Encourage resourceful air quality improvement and reduction methods.

Mitigation/Implementation Measures

Measure 9: A traffic study in accordance with the requirements of Kern County and CalTrans, as appropriate, shall be submitted for all discretionary projects. Study shall demonstrate consistency with the Willow Springs Specific Plan.

Measure 13: The Traffic Impact Fee Program implements Mitigation Measure 10 of the Willow Springs Final Environmental Impact Report (EIR).

Water Quality and Availability

Goal

Goal 1: To ensure that new developments are provided with an adequate water supply and wastewater disposal/treatment facilities.

Policies

Policy 1: Water supply method and wastewater disposal/treatment facility shall be as required by Kern County.

Policy 2: Separate environmental documentation shall be required for the methods of water supply and wastewater disposal/treatment selected.

Mitigation/Implementation Measures

Measure 4: The individual project applicants shall adhere to the following guidelines as established by the Department of Water Resources for flood damage prevention:

General Provision

Goal

Goal 9: Fire flow provisions and on-site fire protection standards (i.e., sprinklers/water storage) shall be in compliance with minimum standards provided by the Kern County Fire Department.

Kern County Zoning Ordinance

Title 19 of the Kern County Ordinance provides a description of permitted uses for the various zoning classifications within the County. The Zoning Ordinance consists of two primary parts: a Zoning Map that delineates the boundaries of zoning districts; and a Zoning Code that explains the purpose of the districts, specifies permitted and conditional uses, and establishes development and performance standards. The intent of the Zoning Code is to protect public health, safety, and the general welfare of residents and visitors in the County. Together with the Zoning Map, the Zoning Code identifies the particular uses permitted on each parcel of land in the County and sets forth regulations and standards for development to ensure that the policies, goals, and objectives of the General Plan are implemented. In addition to land use regulations, the Zoning Code contains development standards that can lessen a new structure's impacts on a location or area. These standards control the height, setbacks, parking, lot coverage, gross floor area, etc. for new structures. The Zoning Code also regulates which uses are permitted in each of the County's zoning districts to ensure compatibility between land uses.

Regional Transportation Plan

The latest Regional Transportation Plan (RTP) was prepared by the Kern Council of Governments (COG), and was adopted in August 16, 2018. The 2018 RTP is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, State, and federal agencies. New to the 2018 RTP, California's Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, calls for the Kern RTP to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas (GHG) emissions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low income housing needs and transportation planning.

The intent of the SCS is to achieve the State's emissions reduction targets for automobiles and light trucks. The SCS will also provide opportunities for a stronger economy, healthier environment, and safer quality of life for community members in Kern County. The RTP/SCS seeks to: improve economic vitality; improve air quality; improve the health of communities; improve transportation and public safety; promote the

conservation of natural resources and undeveloped land; increase access to community services; increase regional and local energy independence; and increase opportunities to help shape our community's future.

The 2018 RTP/SCS financial plan identifies how much money is available to support the region's transportation investments. The plan includes a core revenue forecast of existing local, State, and federal sources along with funding sources that are considered to be reasonably available over the time horizon of the RTP/SCS. These new sources include adjustments to State and federal gas tax rates based on historical trends and recommendations from two national commissions (National Surface Transportation Policy and Revenue Study Commission and National Surface Transportation Infrastructure Financing Commission), leveraging of local sales tax measures, local transportation impact fees, potential national freight program/freight fees, future State bonding programs, and mileage based user fees (Kern COG, 2018).

Kern County's Solid Waste Management Plan

The Solid Waste Management Plan is a comprehensive guide for all solid waste management activities in the County. The plan identifies the existing solid waste generation and disposal facilities in Kern County, estimates future solid waste disposal demand, and identifies programs to meet this future need.

Kern County and Incorporated Cities Hazardous Waste Management Plan

The Kern County and Incorporated Cities Hazardous Waste Management Plan focuses on the siting of hazardous waste disposal facilities, the transport of hazardous waste in the County, protection of water resources from hazardous waste contamination, and public education concerning the use and disposal of hazardous waste.

4.11.4 Impacts and Mitigation Measures

Methodology

The potential impacts associated with the project are evaluated on a qualitative basis through a comparison of the existing land use and the proposed land uses, in consideration of the applicable planning goals identified above. Compliance with the aforementioned policies is illustrated in consistency tables provided in the project Impacts section below. The change in the land use on the project site is significant if the project results in the effects described in the thresholds of significance below. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project could have a have a significant adverse effect on land use if the project would:

a. Physically divide an established community; or

b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Project Impacts

Impact 4.11-1: The project would cause a significant environmental impact due to physically dividing an established community.

The project would be developed on primarily open desert land, and active or fallow agricultural land. The surrounding area is primarily open desert, permitted solar energy generating facilities, or land in agricultural production. There are scattered residentially developed properties surrounding the project site. The nearest community (Rosamond) is located approximately 5.5 miles to the east of the project site. The project is not anticipated to physically divide or restrict access to the Community of Rosamond or any other community. Therefore, impacts related to the physical division of an established community would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.11-2: The project would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

The Kern County General Plan, Willow Springs Specific Plan, and the Kern County Zoning Ordinance establish land use policies and regulations that are applicable to the project. The following discussion evaluates the project's conformity to these plans, policies and regulations. The proposed project would require approval of Conditional Use Permits (CUPs) No. 1, Map 231-18; No. 33, Map 232; No. 34, Map 232; No. 35, Map 232; and No. 36, Map 232 from the Kern County Planning Commission for construction and operation of a 250 megawatt (MW) solar project and associated communication towers.

Kern County General Plan and Willow Springs Specific Plan

Table 4.11-2, *Consistency Analysis with Kern County General Plan for Land Use*, presents an evaluation of the project's consistency with the Kern County General Plan. The table lists the goals and policies identified above in the regulatory setting and provides analysis on the project's general consistency with overarching policies. Additionally, the table provides goals and policies of issue areas that are presented in more detail in other sections of the EIR. As evaluated in detail in **Table 4.11-2**, *Consistency Analysis with*

Kern County General Plan for Land Use, the project is consistent with the goals and policies of the Kern County General Plan.

Table 4.11-3, *Consistency Analysis with Willow Springs Specific Plan for Land Use*, presents an evaluation of the project's consistency with the Willow Springs Specific Plan. The table lists the goals and policies identified above in the regulatory setting and provides analysis on the project's general consistency with overarching policies. Additionally, the table provides goals and policies of issue areas that are presented in more detail in other sections of the EIR. As evaluated in detail in **Table 4.11-3**, *Consistency Analysis with Willow Springs Specific Plan for Land Use*, the project is consistent with the goals and policies of the Willow Springs Specific Plan.

Kern County Zoning Ordinance

As described above, the project 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 **Table 4.11-1**, *Project Site and Surrounding Land Use Designations and Zoning Classifications,* above, the Kern County Zoning Ordinance designates portions of the project site as being within the A FPS (Exclusive Agriculture - Floodplain Secondary Combining), A GH FPS (Exclusive Agriculture – Geologic Hazard Combining – Floodplain Secondary Combining), E(2½) RS FPS (Estate (2½ acres) – Residential Suburban Combining – Floodplain Secondary Combining), E(5) RS FPS (Estate (5 acres) – Residential Suburban Combining – Floodplain Secondary Combining), and E(10) RS FPS (Estate 10 acres – Residential Suburban Combining - Floodplain Secondary Combining) Willow Springs Specific Plan Zone Districts. The project is requesting a Zone Change for all parcels with existing zone designations of E(2 ½) RS FPS, E(5) RS FPS and E(10) RS FPS, to be re-zoned A FPS; with the exception being the parcel of the Chaparral site located at the northwest corner of Holiday Avenue and 110th Street West, for which the project proponent requested a Zone Change from E(2 ½) RS FPS to A-1 FPS. With the approval of the Zone Change requests, the entirety of project will be zoned A-1 FPS, A FPS or A GH FPS. Pursuant to Sections 19.12.020, 19.12.030, 19.68.020, and 19.68.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned Exclusive Agriculture (A) and A-1 (Limited Agriculture) subject to securing a Conditional Use Permit. The project proponent is requesting three CUPs to allow for the construction and operation of a 250 MW solar project (along with two CUPs to allow for the associated communication towers) within the aforementioned Zoning Districts in Maps 231-18 and 232. Because the project's proposed 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 proposed Zone Districts. As such, with approval of the CUPs, the proposed project would be consistent with applicable land use policies and regulations, and impacts related to consistency with the Zoning Ordinance would be less than significant.

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 is the western Antelope Valley. This scope was selected to analyze the cumulative impact to regional land use patterns of project development in the area, and because there is some uniformity to existing land use patterns in this region. As described in more detail in Chapter 3, *Project Description*, in **Table 3-4**, *Cumulative Projects List*, of this EIR, 145 projects are proposed within the geographic scope, including several solar projects. While the surrounding area is still relatively rural in nature, the project, along with related projects, has the potential to contribute to a cumulative influence on proposed land uses in and around the project site.

The anticipated impacts of the project in conjunction with cumulative development in the area of the project would increase the urbanization and result in the loss of open space. However, potential land use impacts require evaluation on a case-by-case basis because of the interactive effects of a specific development and its immediate environment. As described in **Table 4.11-2**, *Consistency Analysis with Kern County General Plan for Land Use*, the proposed project would be consistent with the goals and policies of the Kern County General Plan. In addition, with approval of the Specific Plan Amendments, Zone Changes, and 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 separate undergo environmental review on a case-by-case basis in accordance with the requirements of CEQA. Each related project would also be required to demonstrate consistency with all applicable planning documents governing the project site, including the Kern County General Plan the Kern County Zoning Ordinance, and the Willow Springs Specific Plan. Should potential impacts be identified, appropriate mitigation would be prescribed that would likely reduce potential impacts to a less-than-significant level.

With regard to cumulative effects of utility-sized solar power generation facilities, there is a potential that outside factors, such as the development of newer technology, change in State or national policy that encourages the construction of such facilities, or other economic factors, could result in the abandonment of such facilities. Unlike other facilities that, once constructed, can be retrofitted and utilized for another specific use, solar power generation facilities have little opportunity for other uses should the project not be in operation. The potential for the cumulative effects caused by the abandonment of multiple solar facilities in Kern County could result in impacts on surrounding land uses should it be determined that these facilities are no longer viable commercial operations. Therefore, Mitigation Measure MM 4.11-1, which would require the implementation of a decommissioning plan to be carried out by the project proponent once the life of the project has ended, has been included to establish safeguards to ensure the maintenance of the health, safety, and welfare of the citizens of the County. 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. Mitigation Measure MM 4.11-2 is also being included to ensure that the proposed solar facility does not interfere with the telemetry operations associated with the Edwards Air Force Base. With the implementation of Mitigation Measure MM 4.11-1 and MM 4.11-2, 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 operator shall provide a Decommission Plan for review and approval by the Kern County Public Works Department or a County-contracted consulting firm at a cost to be borne by the project operator. The Decommission Plan shall factor in the cost to remove the solar panels and support structures, replacement of any disturbed soil from removal of support structures, and control of fugitive dust on the remaining undeveloped land. Salvage value for the solar panels and support structures shall be included in the financial assurance calculations. The assumption, when preparing the estimate, is that the project operator is incapable of performing the work or has abandoned the solar facility, thereby requiring Kern County to hire an independent contractor to perform the decommissioning work. In addition to submitting a Decommission Plan, the project operator shall post or establish and maintain financial assurances with Kern County related to the decommissioning of the site as identified on the approved Decommission Plan in the event that at any point in time the project operator determines it is not in the company's best interest to operate the facility.

The financial assurance required prior to issuance of any building permit shall be established using one of the following:

a. An irrevocable letter of credit;

b. A surety bond;

c. A trust fund in accordance with the approved financial assurances to guarantee the decommissioning work will be completed in accordance with the approved decommission plan; or

d. Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department.

The financial institution or Surety Company shall give the County at least 120 days' notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed annually by the Kern County Public Works Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate those adequate funds exist to ensure decommissioning of all solar panels and support structures identified on the approved Decommission Plan. Should the project operator decommission the site on their own, the County will not pursue forfeiture of the financial assurance.

Once decommissioning has occurred, financial assurance for that portion of the site will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommissioning of the site by the County shall be returned to the project operator.

Should any portion of the solar field not be in operational condition for a consecutive period of twelve 12 months that portion of the site shall be deemed abandoned and shall be removed within sixty (60) days from the date a written notice is sent to the property owner and solar field owner, as well as the project operator, by the County. Within this sixty (60) day period, the property owner, solar field owner, or project operator may

provide the director of the Kern County Planning and Natural Resources Department a written request and justification for an extension for an additional twelve (12) months. The Kern County Planning and Natural Resources Director shall consider any such request at a Director's Hearing as provided for in Section 19.102.070 of the Kern County Zoning Ordinance. In no case shall a solar field that has been deemed abandoned be permitted to remain in place for more than forty-eight (48) months from the date, the solar facility was first deemed abandoned.

MM 4.11-2: Prior to the operation of the solar facility, the operator shall consult with the Department of Defense to identify the appropriate Frequency Management Office officials to coordinate the use of telemetry to avoid potential frequency conflicts with military operations.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.11-1 and MM 4.11-2, 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 project with all applicable goals and policies of the Kern County General Plan and relevant planning documents that are applicable to the project site.

Project Consistency with the Willow Springs Specific Plan

Table 4.11-3, *Consistency Analysis with Willow Springs Specific Plan Policies for Land Use*, provides summarizes the consistency of the project with all applicable goals and policies of the Willow Springs Specific 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 4.10-1.	Consistent with this policy, the project would develop a solar PV power generation and storage facility that is not located on a hazardous site. See Section 4.9, *Hazards and Hazardous Materials*, of this EIR. As described in Section 4.7, *Geology and Soils*, of this EIR, the project site is not transected by a known active or potentially active fault and is not located within a State of California Alquist-Priolo Earthquake Fault Zone. In addition, construction of the 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, the proposed project would implement the recommendations of the final design level geotechnical report. The final report's recommendations would be consistent with the Kern County Building Code (Chapter 17.08) and the most recent version of the California Building Code. As described in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Implementation of Mitigation Measure MM 4.10-1 would require preparation of a drainage plan that would design project facilities to have one-foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures and grading for the project would be designed so that water surface elevations during flood events would not be increased by more than one foot. Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		Thus, 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 project would be consistent with this goal.
Policy 1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained (Map Code 2.1 (Seismic Hazard), Map Code 2.2 (Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard)) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.	Consistent.	See 1.3, *Physical and Environmental Constraints*, Goal 1, of the Kern County General Plan, above.
Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See Section 4.10, *Hydrology and Water Quality*, of this EIR. As described therein, project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the proposed project would be consistent with this policy.
Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See Section 4.10, *Hydrology and Water Quality*, of this EIR. As described therein, the project would not increase the potential for flooding beyond existing conditions. Flooding in this location would not result in a safety hazard, as the project would not establish a substantial permanent population on-site. Further, the project would be developed in accordance with the General Plan and Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the proposed project would be consistent with this policy.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 11: Protect and maintain watershed integrity within Kern County.	Consistent with implementation of Mitigation Measure MM 4.9-1.	As discussed in Section 4.10, *Hydrology and Water Quality*, of the EIR, the project site would implement BMPs during construction to avoid impacts to water quality. As described in Section 4.9, *Hazards and Hazardous Materials,* of this EIR, the project would also implement Mitigation Measure MM 4.9-1 which would require the project proponent to provide a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.
Measure D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.	Consistent with implementation of Mitigation Measures MM 4.10-1 and MM 4.10-2	The project would implement Mitigation Measure MM 4.10-1 which would require the preparation of a hydrologic study and drainage plan. The hydrologic study and drainage plan shall be prepared in accordance with the Kern County Grading Code and Kern County Development Standards. Since project construction would disturb well over an acre of ground, the project would implement Mitigation Measure MM 4.10-2, in which 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. The proposed project would also be required to implement a drainage plan that would minimize the potential for changes in onsite drainage patterns that could increase erosion and sedimentation (See Section 4.10, *Hydrology and Water Quality,* for more details). A grading permit would be obtained from the County prior to commencement of construction activities. According to Chapter 17.28 of the Kern County Grading Ordinance, this includes submittal of grading plans to the County for review prior to issuance of a grading permit and grading activities on the project site. County review of grading plans would ensure that appropriate erosion control measures have been implemented on site. Therefore, the proposed project would be consistent with this measure.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, *Hydrology and Water Quality*, of this EIR. The project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the proposed project would be consistent with this measure.
Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.	Consistent with implementation of Mitigation Measure MM 4.10-1.	As described in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the project would be developed in accordance with the General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the proposed project would be consistent with this measure.
Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.3, *Physical and Environmental Constraints,* Measure H, of the Kern County General Plan, above.
Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.	Consistent with implementation of Mitigation Measure MM 4.10-2.	Section 4.10, *Hydrology and Water Quality*, of this EIR, 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, as applicable. Further, as the project is larger than one-acre in size, the project would implement Mitigation Measure MM 4.10-2, which would include the development of a SWPPP, which includes BMPs consistent with Regional Water Quality Control Board.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
1.4 Public Facilities and Services		
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 Measures MM 4.14-2 through MM 4.14-4.	As discussed in Section 4.14, *Public Services*, of this EIR, the project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services and facilities. Further, Mitigation Measures MM 4.14-3 and MM 4.14-4 would provide a tax to the Kern County Auditor/Controller for all years of operation.
Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.	Consistent.	Public utility impacts are evaluated in Section 4.17, *Utilities and Service Systems*, of this EIR. 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 project would be minimal and would be obtained from an existing source with existing water rights, impacts related to water supply would be less than significant and there would be sufficient water supply for other uses in Kern County. Water supply is discussed in more detail in Section 4.17, *Utilities and Service Systems,* of this EIR.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.	Consistent with implementation of Mitigation Measure MM 4.14-2.	The proposed project would construct and operate two combined 250 MW solar facilities. The proposed project would consider several options for gen-tie routes, although only one route would be constructed. All options involve the proposed project connecting to existing solar infrastructure. All infrastructure improvements associated with the proposed project would be fully funded by the project proponent. No further improvements are anticipated as a part of the project. However, should improvements be made, the project proponent would coordinate with the County to ensure that the cost of the infrastructure improvement is properly funded. Additionally, as discussed in Section 4.14, *Public Services*, the project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services. The project would also implement Mitigation Measures MM 4.14-3 and MM 4.14-4, if the project is sold to a city, county, or utility company with assessed taxes that total less than $3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of $3,000 per megawatt. The amount shall be paid for all years of operation.
Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.	Consistent with implementation of Mitigation Measure MM 4.17-1.	Public utility impacts are evaluated in Section 4.17, *Utilities and Service Systems,* of the EIR. As described therein, the project would have less-than-significant impacts on water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities. With the implementation of Mitigation Measure MM 4.17-1, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		construction and operation, resulting in less than significant impact to solid waste providers.
Policy 6: The County will ensure adequate fire protection to all Kern County residents.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.4, Public Services and Facilities, Goal 1, above. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.
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. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.
Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the CEQA documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.	Consistent with implementation of Mitigation Measure MM 4.14-2.	See 1.4, Public Services and Facilities, Policy 3, above. Also, the project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.
Measure B: Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of	Consistent with implementation of Mitigation Measure MM 4.14-2	See 1.4, Public Services and Facilities, Goal 1, above. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
approval of the Final Map. This implementation can be effectuated by the formation of a County work group.		provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.
Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.	Consistent.	Project effects related to utilities are discussed in Section 4.17, *Utilities and Service Systems*, of this EIR. The project would result in less-than-significant impacts to utilities. Furthermore, the proposed project would include the development of a solar PV power generating facility that would produce approximately 250 MW, which would be delivered to the grid, reducing dependence on fossil fuel based energy.
Measure D: Involve utility providers in the land use and zoning review process.	Consistent with implementation of Mitigation Measure MM 4.17-1.	See 1.4, Public Services and Facilities, Policy 3, above.
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 MM 4.14-2.	Impacts to fire protection services are evaluated in Section 4.14, *Public Services*, of this EIR. Mitigation Measure MM 4.14-1 requires implementation of a fire safety plan during project construction and operation that would include notification procedures and emergency fire precautions to help reduce fire risks and the consequential need for fire protection services onsite. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities and assuring the provision of adequate public services and facilities.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
1.9 Resources		
Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.	Consistent.	The project site is located on land that is zoned as A (Exclusive Agriculture), or proposed to be rezoned to A (Exclusive Agriculture) (with the exception of the parcel at the northwest corner of Holiday Avenue and 110th Street West, which is proposed to be rezoned to A-1) and implementation of the proposed project would preclude livestock grazing on the site. Other uses besides agriculture, including solar energy generation and storage, are permitted within the A and A-1 Districts with the approval of a CUP. The project would not involve additional change in the existing environment besides those described in this EIR and would not directly lead to other projects that would result in the loss of grazing land. Direct disturbance related to the project would be approximately 1,406 acres. Therefore, the proposed project would be consistent with this goal.
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.
Goal 5: Conserve prime agricultural lands from premature conversion	Consistent.	As discussed in Section 4.2, *Agriculture and Forestry Resources*, of this EIR, the project site is not designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Consistent with this policy, Prime Farmlands would not be affected by the proposed project.
Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.	Consistent.	Consistent with this policy, the proposed project would develop a solar PV power generating facility designed to produce approximately 250 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 project and would not affect long term use of the site. The project implements the General Plan policy of maximizing utilization of available solar resources.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.	Consistent.	See 1.9, *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*, of this EIR, the project would be required to adhere to the Kern County Development Standards and Kern County Code of Building Regulations which require site drainage plans that include development standards designed to protect water quality. Specifically, the project proponent would be required to prepare and submit a drainage plan to the Kern County Public Works Department, for approval of post-construction structural and nonstructural BMPs that could include Low Impact Development (LID) features such as drainage swales for collection of runoff prior to offsite discharge. Routine structural BMPs are intended to address water quality impacts related to drainage that are inherent in development. As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, the proposed project would likely require one or more retention basins to meet County drainage requirement. Consistent with this policy, the proposed project would require the submission of a drainage plan to the County for review and would implement Mitigation Measure MM 4.10-1, which requires a final hydrologic study and drainage plan designed to evaluate and minimize potential increases in runoff from the project site.
Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.	Consistent.	See 1.9, Resource, Goal 5, of the Kern County General Plan, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure F: Prime agricultural lands, according to the Kern County Interim-Important Farmland 2000 map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.	Consistent.	As discussed in Section 4.2, *Agriculture and Forestry Resources*, of this EIR, the project site does not contain any Prime Farmland identified by the California Department of Conservation. Consistent with this policy, no prime agricultural lands, which have Class I or II soils and a surface delivery water system, would be impacted by the proposed project.
1.10 General Provisions		
Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.	Consistent with implementation of Mitigation Measure MM 4.14-2.	Consistent with this goal, the proposed project requires consideration and approval of a Conditional Use Permit as well as other discretionary actions that ensure compliance with all policies. The project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services.
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. The project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.	Consistent with implementation of Mitigation Measure MM 4.14-2.	Public service impacts are evaluated in Section 4.14, *Public Services,* of this EIR. This EIR serves to comply with this policy. The project would implement Mitigation Measure MM 4.14-2, to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities.
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*, and Section 4.17, *Utilities and Service Systems*, of this EIR. The proposed project would require water supply lines and septic systems (one for each of the O&M building(s)), in order to serve restrooms for the estimated 20 full-time equivalent employees that would be on the project site during the operational phase. Furthermore, the aforementioned water supply lines and septic systems would also serve restroom facilities (located inside of commercial coaches) which would be accessible to the limited number of personnel with access to those commercial coaches. These septic systems would treat sewage and would provide limited recharge to the nearby aquifer. These septic systems would be constructed in accordance with Kern County Public Health Services Department requirements. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed. However, portable toilets and hand washing facilities are also proposed; which would be serviced by truck and any resulting wastewater would be disposed of at an approved off-site disposal facility. 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 4.3-3.	Air quality and GHG impacts are evaluated in Sections 4.3, *Air Quality*, and 4.8, *Greenhouse Gas Emissions,* of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-3, which would reduce impacts to air quality to the extent feasible. Air quality mitigation measures include diesel emission-reduction measures during construction, fugitive dust control measures, and Valley Fever exposure minimization 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: (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.	Consistent.	See 1.10.2, *Air Quality*, Policy 18, above. This EIR serves to comply with this policy. The project cannot reduce impacts to less than significant even with required mitigation. Appropriate findings under CEQA would be required to be made by the decision makers in order to approve the project despite the significant and unavoidable cumulative impacts on air quality.
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 4.3-2	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. As discussed therein, implementation of Mitigation Measure MM 4.3-2 would further reduce fugitive dust emissions during construction and operation, in compliance with the adopted rules and regulations of the Eastern Kern County Air Pollution Control District on ministerial permits.
Policy 21: The County shall support air districts efforts to reduce PM_{10} and $PM_{2.5}$ emissions.	Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2.	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. As discussed in that section, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 would further reduce PM_{10} and $PM_{2.5}$ emissions during construction and operation.
Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, state, and local standards.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-3.	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-3, which would reduce impacts to air quality to the extent feasible. The project would be in compliance with all applicable Eastern Kern County Air Pollution Control District, rules and regulations.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.	Consistent.	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. Consistent with this measure, the necessary discretionary permits shall be referred to the Eastern Kern Air Pollution Control District for review and comment.
Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to: a. Minimizing idling time. b. Electrical overnight plug-ins.	Consistent with implementation of Mitigation Measures MM 4.3-1	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. Consistent with this measure, implementation of Mitigation Measure MM 4.3-1 would require diesel exhaust reduction strategies.
Measure H: Discretionary projects may use one or more of the following to reduce air quality effects: a. Pave dirt roads within the development. b. Pave outside storage areas. c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans. d. Use of alternative fuel fleet vehicles or hybrid vehicles. e. Use of emission control devices on diesel equipment. f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces. g. Provide bicycle lockers and shower facilities on site. h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86). i. The use and development of park and ride facilities in outlying areas. j. Other strategies that may be recommended by the local Air Pollution Control Districts.	Consistent with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2.	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. Consistent with this measure, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-2 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 4.3-2.	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. As discussed in that section, implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 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, MM 4.5-3, and MM 4.5-4.	Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources,* of this EIR. This EIR serves to comply with this policy and includes Mitigation Measures MM 4.5-1 through MM 4.5-4 to promote the preservation of cultural and historic resources where necessary.
Measure K: Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.	Consistent Mitigation Measures MM 4.5-3.	Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources,* of this EIR. Consistent with this measure, copies of reports will be provided to the Kern County Planning and Natural Resources Department and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield, per Mitigation Measure MM 4.5-3.
Measure L: The County shall address archaeological and historical resources for discretionary projects in accordance with CEQA.	Consistent with implementation of Mitigation Measures 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. Consistent with this measure, impacts to archaeological and historical resources are evaluated in accordance with CEQA. This EIR serves to comply with this policy.
Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.	Consistent with implementation of Mitigation Measures MM 4.7-2 through MM 4.7-4	Paleontological resource impacts are evaluated in Section 4.7, *Geology and Soils,* of this EIR. Mitigation Measures MM 4.7-2 through MM 4.7-4 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.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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,* of this EIR. Consistent with this measure, notification regarding the proposed project would be accomplished in accordance with the established procedures for discretionary projects and CEQA documents.
Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.	Consistent with implementation of Mitigation Measure MM 4.5-1.	Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources,* of this EIR. This EIR serves to comply with this measure and includes Mitigation Measure MM 4.5-1, which would require consultation with the Native American monitor(s) to conduct a Cultural Resources Sensitivity Training for all personnel working on the proposed project.
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 4.4-14.	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts with 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 4.4-14.	Biological Resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts with 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 was sent to state and federal agencies requesting their input on the biological resource evaluation. Similarly, this EIR will also be circulated to these agencies, and staff will have the opportunity to comment on the biological resources evaluation. Therefore, the County is complying with this policy for the project.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
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 4.4-14.	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. The project site is located within the Willow Springs Specific Plan Area. Consistency with the applicable policies of the Willow Springs Specific Plan Area are discussed below. Additionally, implementation of Mitigation Measures MM 4.4-1 through 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.
Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.	Consistent with implementation of Mitigation Measure MM 4.4-4.	Biological resource impacts and impacts to riparian areas, are evaluated in Section 4.4, *Biological Resources*, of this EIR. Consistent with this measure, Mitigation Measure MM 4.4-4 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. Consistent with this measure, the evaluation of impacts to biological resources was performed in accordance with CEQA.
Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.	Consistent with implementation of Mitigation Measure MM 4.4-1 through MM 4.4-14.	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. Consistent with this measure, the project would implement mitigation measures that require consultation with the California Department of Fish and Wildlife. The County has and will respond to all comments from reviewing agencies during the CEQA process.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
1.10.6 Surface Water and Groundwater		
Policy 34: Ensure that water quality standards are met for existing users and future development.	Consistent with implementation of Mitigation measures MM 4.9-1.	Water quality impacts are evaluated in Section 4.10, *Hydrology and Water Quality,* of this EIR. Consistent with this policy, the proposed project would implement best management practices during construction to avoid impacts to water quality. The project would also implement a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.
Policy 41: Review development proposals to ensure adequate water is available to accommodate projected growth.	Consistent.	See 1.4*, Public Facilities and Services,* Goal 5, above.
Policy 43: Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.9*, Resources,* Policy 11, above.
Policy 44: Discretionary projects shall analyze watershed impacts and mitigate for construction-related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (CEQA), to prevent the degradation of the watershed to the extent practical.	Consistent with implementation of Mitigation Measures MM 4.10-1.	Section 4.10, *Hydrology and Water Quality,* of this EIR, discusses impacts and mitigation for potential impacts to the watershed during construction from pollutants, alteration of flow patterns, and changes in impervious surfaces. Consistent with this policy, construction-related impacts related to alteration of flow patterns and impervious surfaces would be less than significant.
Measure Y: Promote efficient water use by utilizing measures such as: (i) Requiring water-conserving design and equipment in new construction; (ii) Encouraging water-conserving landscaping and irrigation methods; and (iii) Encouraging the retrofitting of existing development with water conserving devices.	Consistent.	See 1.4*, Public Facilities and Services,* Goal 5, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
1.10.7 Light and Glare		
Policy 47: Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.	Consistent with implementation of Mitigation Measures MM 4.1-4 through MM 4.1-7.	Aesthetic impacts are evaluated in Section 4.1, *Aesthetics*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts through implementation of mitigation measures.
Policy 48: Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	Consistent with implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7.	See *1.10.7, Light and Glare, Policy 47*, above.
Measure AA: The County shall utilize *CEQA Guidelines* and the provisions of the Zoning Ordinance to minimize the impacts of light and glare on adjacent properties and in rural undeveloped areas.	Consistent with implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7.	See *1.10.7, Light and Glare, Policy 47*, above.
CHAPTER 2 CIRCULATION ELEMENT		
2.1 Introduction		
Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.	Consistent.	See 1.3, *Physical and Environmental Constraints*, Goal 1, of the Kern County General Plan, above.
Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the County.	Consistent.	Traffic impacts are evaluated in Section 4.15*, Transportation,* of this EIR. Consistent with this goal, the proposed project would maintain a minimum LOS C or better for all roads throughout the County.
2.3.3 Highways Plan		
Goal 5: Maintain a minimum Level of Service (LOS) D.	Consistent.	Traffic impacts are evaluated in Section 4.15*, Transportation,* of this EIR. Consistent with this goal, the proposed project would maintain a minimum LOS C, D or better for intersections utilized to access the project.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section lines. This is because the road center line can be determined by an existing survey.	Consistent.	Section 4.15*, Transportation,* of this EIR provides a discussion of County circulation consistency. The project would include internal service roads. Consistent with this policy, all road improvements would be completed per Caltrans and/or County code and regulations. If access roads need to be built along lines other than those on the circulation diagram map, the project proponent would negotiate necessary easements to allow this, in according with the County.
Policy 3: This plan's road-width standards are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis. • Expressway [Four Travel Lanes] Minimum 110-foot right-of-way; • Arterial [Major Highway] Minimum 110-foot right-of-way; • Collector [Secondary Highway] Minimum 90-foot right-of-way; • Commercial-Industrial Street Minimum 60-foot right-of-way; and • Local Street [Select Local Road] Minimum 60-foot right-of-way.	Consistent.	Traffic impacts are evaluated in Section 4.15*, Transportation,* of this EIR. Consistent with this measure, the proposed project would be in compliance with the road network policies and would implement the Kern County Development Standards as they relate to road standards and planning requirements.
Measure 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*, Transportation,* of this EIR. Consistent with this policy, the proposed project would maintain a minimum LOS C, D or better for intersections utilized to access the project. 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.
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 project-related driveways that provide access to County, city, or State roads.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 6: The County may accept a developer's road into the county's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.	Consistent.	The proposed project would not develop a public road. However, consistent with this policy, the project proponent would be required to obtain approval from the County via an encroachment permit where any proposed private access driveways for the project would intersect public right-of-way.
Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards. 2.3.6 Vacation of Existing or Recorded Future Streets, Highways, or Public Easements.	Consistent.	Traffic impacts are evaluated in Section 4.15*, Transportation,* of this EIR. Consistent with this policy, the proposed project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.
2.3.6 Vacation of Existing or Recorded Future Streets, Highways, or Public Easements		
Goal 1: Provide a means for guiding decisions on vacating public roads.	Consistent.	As discussed in Chapter 3, *Project Description*, of this EIR, the project has requested approval of Specific Plan Amendments to the Circulation Element of the Willow Springs Specific Plan, to eliminate Future Road Reservations, and has requested vacations of public access easements; those requests are subject to approval by the Kern County Board of Supervisors. With the approval of the aforementioned requests for Specific Plan Amendments and nonsummary vacation of public access easement, the proposed project would be consistent with this goal.
Policy 1: A road vacation influencing the construction or operation of expressway, an arterials or collector highway may occur with, or after, amending this Element. Kern County will not vacate any public expressway, arterial or collector highway right-of-way without amendment to this Element. The County will need to amend the right-of way status to local or commercial-industrial streets.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, 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 2: A study, prepared at the applicant's expense, shall accompany the road vacation application. The study should provide information that will aid in finding the importance of the entire length of the right-of-way. The study would include a review of existing and proposed land uses and localized traffic modeling. This will help Kern County decide what corresponding changes are needed to the Land Use, Open Space and Conservation Element, or affected specific plan. This also will help Kern County decide if additional public road services or other traffic management are required elsewhere.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
Policy 3: If the road vacation applicant is a private entity, all costs for the public hearing shall be borne by the applicant. Also, costs associated with providing any necessary additional public road services or other traffic management caused by the road vacation shall be paid by the applicant.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1,* above.
Policy 4: The vacation of a road shall not take away legal access to adjacent properties or "land-lock" any legal lot or parcel of record. Legal access shall be determined through a report submitted with the application for road vacation.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
Policy 5: If Kern County determines that the right-of-way is not needed for circulation in the general area, a road vacation may be authorized. An acceptable project shall be determined through a report submitted with the road vacation application and in keeping with traffic modeling parameters of this Plan.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
Policy 6: A road vacation may be authorized if physical conditions such as natural, or manmade topography prevent rational extension of the facility. Physical conditions affecting roadways shall be determined through a report submitted with the road vacation application.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 7: A road vacation shall only affect public, recorded rights-of-way or public service easements. The potential effects of a road vacation upon rights-of-way and easements are to be determined by a report submitted with the road vacation application. A vacation of private access or private service easement is not under County jurisdiction. Kern County considers these matters "civil" actions. These civil actions should be acted upon accordingly.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
Policy 8: A road vacation may be authorized if the right-of-way is not improved or used for its original purpose. Existing improvements and facility use shall be determined by a report submitted with the road vacation application.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
Policy 9: A road vacation may be authorized to remove excess right-of-way caused by relocation, or at the beginning of a general plan amendment proceeding. Excess right-of-way shall be determined through a report submitted with the road vacation application.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
Policy 10: A road vacation may be approved if there is an agreement to close a public street. A road vacation may be approved with acknowledgment of an impassable street. A road vacation may be approved with a land division map over the area of vacation if the project has comparable methods of vehicular access.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
Policy 11: A road vacation procedure may be used for considering public service easement or utility service easement abandonments. The procedure is the same as any public right-of-way vacation.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, 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 12: A vacation of improved road right-of-way, or public service easement, should not occur until the lead agency makes findings. One important finding is the land is no longer needed for public use. A vacation of improved road right-of-way, or public service easement, should not occur until the right-of-way is superseded by relocation, and improved to acceptable Kern County Development standards. The Board of Supervisors shall have accepted the replacement facility into the maintained road system.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
Policy 13: A general vacation proceeding (consistent with State of California Streets and Highway Code) will require a public hearing when the vacation affects existing in place facilities or is a project caused by relocating right-of-way.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
Policy 14: A summary vacation shall be consistent with State of California Streets and Highway Code. A summary vacation may be used when the right-of-way does not exist, is unused, or moved. A summary vacation may be used where right-of-way is impassable, unnecessary for present or prospective public use, or is excess or public service easement land.	Consistent.	See *2.3,6, Vacation of Existing or Recorded Future Streets, Highways, or Public Easements, Goal 1*, above.
2.3.10 Congestion Management Programs		
Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern Council of Government's Congestion Management Program.	Consistent with Mitigation Measure MM 4.15-1.	Traffic impacts are evaluated in Section 4.15*, Transportation,* of this EIR. Consistent with this goal, the proposed project would implement Mitigation Measure 4.15-1, and comply with the requirements of the Kern Council of Government's Congestion Management Program.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
2.5.1 Trucks and Highways		
Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.	Consistent with Mitigation Measure MM 4.15-1.	Traffic impacts are evaluated in Section 4.15*, Transportation,* of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measure MM 4.15-1, which would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards, which would ensure the provision of heavy truck transportation resulting from project implementation in the safest way possible.
Goal 2: Reduce potential overweight trucks.	Consistent with Mitigation Measure MM 4.15-1.	See 2.5.1*, Trucks and Highways,* Goal 1, above.
Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.	Consistent with Mitigation Measure MM 4.15-1.	See 2.5.1*, Trucks and Highways,* Goal 1, above.
Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.	Consistent with Mitigation Measure MM 4.15-1.	As discussed in Section 4.15, *Transportation* of this EIR, coordination and consultation with Caltrans will occur as necessary, consistent with this policy.
2.5.4 Transportation of Hazardous Materials		
Goal 1: Reduce risk to public health from transportation of hazardous materials.	Consistent with implementation of Mitigation Measure MM 4.9-1.	Section 4.9, *Hazards and Hazardous Materials*, of this EIR provides a discussion of Hazardous Materials Transportation and existing regulatory requirements of the California Vehicle Code that pertain to transport of hazardous materials and wastes. Consistent with this policy, the project would not pose a significant risk to public health from transportation of hazardous materials with implementation of Mitigation Measure MM 4.9-1, which requires the preparation of a Hazardous Materials Business Plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would ensure that all handling, storage, and disposal of hazardous materials would be conducted in

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		accordance with proven practices to minimize exposure to maintenance workers and/or the public.
Policy 1: The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.	Consistent with implementation of Mitigation Measure MM 4.9-1.	See 2.5.4*, Transportation of Hazardous Materials,* Goal 1, above.
KERN COUNTY GENERAL PLAN CHAPTER 3, NOISE ELEMENT		
3.3 Sensitive Noise Areas		
Goal 1: Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.	Consistent.	Noise impacts, sensitive receptors and County noise thresholds are evaluated in Section 4.13, *Noise*, of this EIR. As discussed in that section, the proposed project would not cause significant impacts to sensitive receptors. Thus, the project would be consistent with this goal.
Goal 2: Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.	Consistent	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with existing land use designations of the project site.
Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.	Consistent.	See 3.3, *Sensitive Noise Areas*, Goal 1, above.
Policy 3: Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.	Consistent.	See 3.3, *Sensitive Noise Areas*, Goal 1, above. Consistent with this policy the project would be encouraged to provide vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.
Policy 4: Utilize good land use planning principles to reduce conflicts related to noise emissions.	Consistent.	See 3.3, *Sensitive Noise Areas*, Goal 2, above. Noise-sensitive land uses are evaluated in Section 4.13, *Noise*, of this EIR.
Policy 7: Employ the best available methods of noise control.	Consistent.	See 3.3, *Sensitive Noise Areas*, Goal 1, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure A: Utilize zoning regulations to assist in achieving noise-compatible land use patterns.	Consistent.	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, upon approval of the proposed SPAs for land use designations and Zone Changes, the proposed project would be consistent with the 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.
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.	Consistent.	Consistent with this measure, the proposed project has prepared an acoustical analysis in accordance with the requirements of Chapter 3, *Noise Element*, Measure G, of the Kern County General Plan.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure I: Noise analyses shall include recommended mitigation, if required, and shall: a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions. b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10–20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element. c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element. d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.	Consistent.	Consistent with this measure, a noise assessment was conducted for the proposed project and is referenced in Section 4.13, *Noise*, of this EIR. In accordance with this measure, the noise assessment includes representative noise measurements, recommended best management practices, estimated noise levels, in terms of 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 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 A: All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisor's action could involve the establishment of a land use activity susceptible to such hazards.	Consistent.	Section 4.7, *Geology and Soils*, of this EIR, discusses potential geologic hazards, Section 4.10, *Hydrology and Water Quality*, of this EIR, discusses potential flood hazards, and Section 4.18, *Wildfire*, of this EIR discusses potential fire hazards as a result of project implementation. Consistent with this measure, all hazards have been considered as part of this analysis.
Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.	Consistent.	Consistent with this policy, the proposed project would not include development for human occupancy, and would not be located near an active earthquake fault.
4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure		
Policy 1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.	Consistent.	Consistent with this policy, the proposed project would not include development for human occupancy, and would not be located near an active earthquake fault.
Measure B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.	Consistent.	See 1.3, *Physical and Environmental Constraints*, Measure D, of the Kern County General Plan, above.
Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.	Consistent.	See 1.3, *Physical and Environmental Constraints*, Goal 1, of the Kern County General Plan, above.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
4.5 Landslides, Subsidence, Seiche, and Liquefaction		
Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	Consistent.	As discussed in Section 4.7, *Geology and Soils*, of this EIR, conditions for landslides are also not present at the site which is characterized by relatively gradual inclines across the site. Grading would be subject to compliance with the NPDES General Construction Permit requirements and the implementation of required BMPs would have the ability to minimize the potential for erosion or loss of topsoil. Adherence to the requirements of the Kern County Building Code and the California Building Code (CBC) would ensure that effects from seismic-related ground failure including liquefaction would be minimized. Shallow groundwater is not expected on the proposed project site and the site is not within an earthquake zone of required investigation for liquefaction (Terracon, 2019). See Section 4.7, *Geology and Soils,* of this EIR.
4.6 Wildland and Urban Fire		
Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.	Consistent with implementation of Mitigation Measure MM 4.14-1 and Mitigation Measure MM 4.14-2.	Consistent with this policy, impacts on emergency services and facilities are discussed and evaluated in Section 4.14, *Public Services*, of this EIR. The project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities.
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*, 4.14, *Public Services*, and 4.18, *Wildfire,* of this EIR.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.	Consistent with implementation of Mitigation Measure MM 4.15-1.	Section 4.15, *Transportation,* of this EIR includes Mitigation Measure MM 4.15-1 would require the approval of a Construction Traffic Control Plan, encroachments and or other necessary permits by Caltrans and/or the Kern County Roads Dept. The project proponent would develop and implement a fire safety plan for use during construction and operation.
Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.	Consistent with implementation of Mitigation Measure MM 4.14-1.	Consistent with this policy, the project would be required to comply with the adopted Fire Code and the requirements of the Kern County Fire Department.
Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.	Consistent with implementation of Mitigation 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. The project would implement Mitigation Measure MM 4.14-2 to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities.
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 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.	Consistent.	See 1.10.5*, 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 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.
5.4.5 Solar Energy Development		
Goal 1: Encourage safe and orderly commercial solar development.	Consistent.	Consistent with this goal, the proposed project requires consideration and approval of a Conditional Use Permit as well as other discretionary actions that ensure compliance with all policies and would develop solar PV facilities that would generate 250 MW of solar energy, and would offset an equivalent amount of fossil fuel-generated electrical power. The site is on vacant land, and is located at a distance from established communities. The location of the site would ensure a safe and orderly development of the solar facilities.
Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.	Consistent.	Consistent with this policy, the proposed project requires consideration and approval of a Conditional Use Permit as well as other discretionary actions that ensure compliance with all policies would develop solar PV facilities capable of generating 250 MW of solar energy. 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.
Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.	Consistent.	Consistent with this policy, the project proposes the development of PV power generation and storage facilities in the desert region of Kern County. Final review of the proposed project by the Kern County Planning and Natural Resources Department, requires consideration and approval of a Conditional Use Permit as well as other discretionary actions that ensure compliance with all policies 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.

TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 4: The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species.	Consistent.	Consistent with this policy, the project proposes the development of PV power generation and storage facilities in the desert region of Kern County. Final review of the proposed project by the Kern County Planning and Natural Resources Department, requires consideration and approval of a Conditional Use Permit as well as other discretionary actions that ensure compliance with all policies as well as adherence to all applicable local, state and federal regulations.
5.4.7 Transmission Lines		
Goal 1: To encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects.	Consistent.	Final review of the 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.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
WILLOW SPRINGS SPECIFIC PLAN		
Land Use Element		
Policy 2: Encourage only those industries that do not significantly increase air pollution levels.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-3.	Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-3 of Section 4.3, *Air Quality*, of this EIR, which would reduce impacts to air quality to the extent feasible. The project would be in compliance with all applicable Eastern Kern County Air Pollution Control District, rules and regulations. Additionally, the project would be designed and constructed in accordance with energy conservation practices, such as those found in the Building Energy Efficiency Standards, and all State and local laws. See Sections 4.3, *Air Quality*, 4.6, *Energy*, and 4.8, *Greenhouse Gas Emissions,* of this EIR. The project cannot reduce impacts to less than significant even with required mitigation. Appropriate findings under CEQA would be required to be made by the decision makers in order to approve the project despite the significant and unavoidable cumulative impacts on air quality.
Policy 5: Encourage the maintenance of visual aesthetics in all new construction.	Consistent with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-3.	Visual impacts are evaluated in Section 4.1, *Aesthetics*, of this EIR. Consistent with this policy, the project would prepare a Maintenance, Trash Abatement, and Pest Management Program that will be submitted to the Kern County Planning and Natural Resources Department. Additionally, the project proponent/operator shall implement color treatment to blend in with the colors found in the natural landscape as well as maintain natural vegetation within the project boundary. The project cannot reduce impacts to less than significant even with required mitigation. Appropriate findings under CEQA would be required to be made by the decision makers in order to approve the project despite the significant and unavoidable cumulative impacts on aesthetics.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 6: Require developers to clean up any identified hazardous waste sites prior to submittal of any land division or development project.	Consistent with implementation of Mitigation Measure MM 4.9-1.	Section 4.9, *Hazards and Hazardous Materials*, of this EIR provides a discussion of hazardous materials. Consistent with this policy, the project would implement Mitigation Measure MM 4.9-1, which requires the preparation of a Hazardous Materials Business Plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to maintenance workers and/or the public.
Policy 8: New and/or existing developments shall comply with the Kern County Zoning Ordinance and this Specific Plan. Where conflicts appear, the more restrictive requirements shall prevail.	Consistent with implementation of Mitigation MM 4.3-1 and MM 4.3-2.	Consistent with this policy, the proposed project would comply with the requirements of the Kern County Zoning Ordinance as evaluated in various sections of this EIR including, Section 4.3, *Air Quality* and Section 4.15*, Transportation.* Additionally, this section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with the Kern County Zoning Ordinance and the Willow Springs Specific Plan.
Policy 10: Require that construction sites be provided with a soil retardant measure approved by the County of Kern (Department of Planning and Development Services and the Environmental Health Services Department) to reduce fugitive dust or blowing sand.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-3.	Air quality and GHG impacts are evaluated in Sections 4.3, *Air Quality*, and 4.8, *Greenhouse Gas Emissions,* of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-3, which would further reduce fugitive dust emissions during construction and operation in compliance with the County of Kern. Air quality mitigation measures include diesel emission-reduction measures during construction, fugitive dust control measures, and Valley Fever exposure minimization measures.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 11: Retain vegetation until actual construction begins.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-14.	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts to vegetation 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.
Resource		
Goal 3: Encourage retention of productive agricultural and dormant mineral resources by imposing a restriction on allowing urban type land uses on nearby adjacent lands.	Consistent.	Upon approval of the proposed zone changes, the project site would be located on land that is zoned as A (Exclusive Agriculture) and A-1 (Limited Agriculture), and implementation of the proposed project would prevent livestock grazing on the site. Other uses besides agriculture, including solar energy generation and storage, are permitted within the A District with the approval of a CUP. The project would not involve additional change in the existing environment besides those described in this EIR. Direct disturbance related to the project would be approximately 1,406 acres. Additionally, as discussed in the NOP/IS, 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. Therefore, the proposed project would be consistent with this goal.
Policy 1: Provide a method encouraging the preservation of agricultural land	Consistent.	As discussed in Section 4.2, *Agriculture and Forestry Resources*, of this EIR, the project site is not designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Therefore, the proposed project would be consistent with this policy.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 2: Initial development within the Update area shall, when possible, be directed towards previously impacted areas (i.e., agricultural fields).	Consistent.	Consistent with this policy, the project proposes the development of solar PV power generation and storage facilities in the desert region of Kern County. Final review of the proposed project by the Kern County Planning and Natural Resources Department requires consideration and approval of a Conditional Use Permit as well as other discretionary actions that ensure compliance with all policies as well as adherence to all applicable local, state and federal regulations.
Policy 3: To ensure compliance with applicable State and federal laws and to protect the biological resources present in the Specific Plan area.	Consistent.	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts with 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.
Measure 15: Where possible, project development within the Specific Plan Update area shall be designed to avoid displacement of destruction of Joshua tree habitat, to the satisfaction of the Kern County Agricultural Commissioner's Office. Areas adjacent to the woodland shall have a 50-foot setback from the Joshua tree plants. Within that setback, a native plant cover should be restored to natural habitat values to serve as a bugger, if such plant cover is not present.	Consistent with implementation of special-status plant avoidance and minimization measures described in Mitigation Measure MM 4.4-1 through MM 4.4-14.	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this measure and reduce potential impacts with mitigation. As discussed in Section 4.4, significant impacts could occur to plant species including Joshua trees, silver cholla, and beavertail cactus on the project site. However, these impacts would be mitigated to a level of less than significant through the implementation of Mitigation Measures MM 4.4-1 through MM 4.4-14.
Measure 16: A Joshua Tree Preservation and Transportation Plan shall be developed by the applicants for each parcel where Joshua trees are located on site. The plan shall be submitted to the Kern County Agricultural Commissioner's office for review and approval to grading permit issuance.	Consistent with implementation of special-status plant avoidance and minimization measures described in Mitigation Measure MM 4.4-1 through MM 4.4-14.	See Resources, Measure 15, above. Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure 23: A Joshua Tree Preservation and/or Transplantation Plan shall be developed by applicants of discretionary projects for each parcel where Joshua trees are located on site. The plan shall be submitted to the Kern County Agricultural Commissioner for review and approval prior to grading permit issuance.	Consistent with implementation of special-status plant avoidance and minimization measures described in Mitigation Measure MM 4.4-1 through MM 4.4-14.	See Resources, Measure 15, above. Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR.
Measure 24: Prior to issuance of any grading permits for individual projects, individual project applicants shall consult with the Regional Water Quality Control Board, State Department of Fish and Game and/or U.S. Fish and Wildlife Service, and the Army Corps of Engineers to identify potentially required permits. Compliance with this measure will be confirmed through the submittal of a letter (in conjunction with submittal of grading permit applications) to the County demonstrating compliance with the above-mentioned agencies.	Consistent.	Section 4.10, *Hydrology and Water Quality*, of this EIR, discusses required compliance with Kern County's NPDES Applicability legislation, which requires projects to comply with the State Water Resources Control Board's Construction General Permit. Additionally, Biological Resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts with 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.
Measure 25: Prior to issuance of grading permits, individual project applicants shall obtain appropriate permits as determined necessary by the Regional Water Quality Control Board, U.S. Fish and Wildlife Service, State Department of Fish and Game, and Army Corps of Engineers.	Consistent.	See Resources, Measure 25, above. Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR and compliance with the State Water Resources Control Board is discussed in Section 4.10, *Hydrology and Water Quality,* of this EIR.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Air Quality		
Goal 1: Imposition of appropriate mitigation measures to reduce where practical to do so, the effect short-term and long-term projects have on the area which involve grading activities, erosion controls, revegetation of disturbed sites, and provisions to introduce into the plan area a competitive job market to reduce travel times.	Consistent.	Air quality and GHG impacts are evaluated in Sections 4.3, *Air Quality*, and 4.8, *Greenhouse Gas Emissions,* of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-3, which would reduce impacts to air quality to the extent feasible. Air quality mitigation measures include diesel emission-reduction measures during construction, fugitive dust control measures, and Valley Fever exposure minimization measures.
Policy 1: Compliance with the Mitigation/Implementation Measures and enactment of an approved Air Quality Attainment Plan.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-3.	Air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR. Consistent with this policy, the proposed project would implement Mitigation Measures MM 4.3-1 through MM 4.3-3, which would reduce impacts to air quality to the extent feasible. The project would be in compliance with all applicable Eastern Kern County Air Pollution Control District, rules and regulations.
Measure 1: To mitigate potential dust generation impacts, the Willow Springs Specific Plan Update project shall comply with applicable County regulations (to the satisfaction of the Kern County Air Pollution Control District), which require specific dust control measures.	Consistent with implementation of Mitigation Measure MM 4.3-2.	The project would implement Mitigation Measures MM 4.3-2 which would require the implementation of a Fugitive Dust Control Plan prior to the issuance of grading or building permits in order to control fugitive PM emissions during construction. See Section 4.3, *Air Quality,* of this EIR.
Measure 2: During construction, all grading activities shall be ceased during periods of high winds (i.e., greater than 30 miles per hour [mph]). To assure compliance with this measure, grading activities are subject to periodic inspections by County staff.	Consistent.	The project would adhere to Chapter 17.28 of the Kern County Code, which regulates grading within the County. Specifically, the project would adhere to Section 17.28.180 (Grading Inspection), which requires that grading operations must be inspected by the building official.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure 3: Construction equipment shall be fitted with the most modern emission control devices and be kept in proper tune. Motors out of proper tune can result in emissions that vastly exceed recommended standards.	Consistent with implementation of Mitigation Measure MM 4.3-1.	The project would implement Mitigation Measure MM 4.3-1, which is intended to limit diesel emission reductions during construction. Mitigation Measure MM 4.3-1 would require that off-road equipment engines over 25 horsepower be equipped with EPA Tier 3 or higher engines if locally available. Mitigation Measure MM 4.3-1 also outlines other specific measures to ensure that all equipment is used efficiently, such as reducing idling time and maintain all equipment in accordance with the manufacturer's specifications. See Section 4.3, *Air Quality,* of this EIR.
Measure 4: The project applicants shall, to the extent feasible, implement applicable control measures contained in the Attainment Plan in effect at the time of adoption of this Specific Plan, by the Air Pollution Control District in 1991. (See Environmental Impact Report Air Quality for additional recommended mitigation measures, page 162.).	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-3.	See Air Quality, Policy 1, above. Further, air quality impacts are evaluated in Section 4.3, *Air Quality*, of this EIR.
Measure 7: All phases of the Willow Springs Specific Plan Update project shall comply with applicable rules and regulations of the Kern County Air Pollution Control District.	Consistent.	The project would implement Mitigation Measures MM 4.3-2 which would require the implementation of a Fugitive Dust Control Plan prior to the issuance of grading or building permits in order to control fugitive PM emissions during construction. See Section 4.3, *Air Quality,* of this EIR.
Biological Resources		
Policy 1: Where possible, development shall be designated to avoid displacement of sensitive species.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-14.	Biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts with 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 2: Focused surveys shall be conducted by a County-approved biologist to establish the presence or absence of sensitive species.	Consistent.	As discussed in Section 4.4, *Biological Resources*, of this EIR, focused surveys were conducted at the project site for multiple species.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 3: Initial development within the area covered under the Willow Springs Specific Plan, when possible, will be directed towards previously impacted areas.	Consistent with implementation of Mitigation Measure MM 4.4-3.	As discussed in Section 4.4, *Biological Resources*, of this EIR, during construction, operations and maintenance, and decommissioning, the project proponent/operator and/or contractor(s) shall implement the general avoidance and protective measures, which includes containing vehicle traffic within the planned impact area or in previously disturbed areas.
Cultural Resources		
Goal 1: To preserve cultural resources contained on sensitive sites located within the Willow Springs Specific Plan area.	Consistent with implementation of Mitigation Measures MM 4.5-1, MM 4.5-2, MM 4.5-3, and MM 4.5-4.	Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources,* of this EIR. This EIR serves to comply with this goal and includes Mitigation Measures MM 4.5-1 through MM 4.5-4 to promote the preservation of cultural and historic resources where necessary.
Policy 1: Archaeological investigations shall be required of specific properties proposed for development. These sites are identified in the Environmental Impact Report under Cultural Resources – Literature and Records Search, page 77, and are listed as: CA-KER-2819, 2820, 2821; CA-KER-522, 1969, 2592, 2593, 2599, 2595 and 2714; CA-KER-129, 273, 298, 302, 303. (Record on file Southern San Joaquin Valley Information Center in Bakersfield – California State University of Bakersfield.	Consistent with implementation of Mitigation Measures Mitigation Measures MM 4.5-2 and MM 4.5-3.	Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources,* of this EIR. Consistent with this policy, impacts to archaeological resources are evaluated in accordance with CEQA. This EIR serves to comply with this policy.
Policy 2: Recorded archaeological sites shall be subjected to individual studies prior to development.	Consistent with implementation of Mitigation Measures Mitigation Measures MM 4.5-1 and MM 4.5-2.	See Cultural Resources, Policy 1, above. Further, impacts to cultural resources are evaluated in Section 4.5, *Cultural Resources,* of this EIR. This EIR serves to comply with this policy.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 15: Require cultural resources report for those areas with high probability for prehistoric activity prior to issuance of any grading permits.	Consistent with implementation of Mitigation Measures MM 4.5-2 and MM 4.5-3.	Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources,* of this EIR. Consistent with this policy, cultural resources reports would be prepared as outlined in of Mitigation Measures MM 4.5-2 and MM 4.5-3. Additionally, 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.
Seismic Safety and Safety Element		
Goal 7: Minimize damage to public facilities and utilities, such as water and gas mains, electric, telephone, and sewer lines, streets, and bridges located in areas of special flood hazard.	Consistent with implementation of Mitigation Measure MM 4.10-1.	As described in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the project would be developed in accordance with the General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the proposed project would be consistent with this goal.
Goal 9: Comply with the requirements of the National Flood Insurance Program Regulations, Parts 59 and 60 of Title 44 of the Code of Federal Regulations.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See Seismic Safety and Safety Element, Goal 7, of the Willow Springs Specific Plan, above.
Goal 15: To protect community residents from undue hazards and costs associated with road maintenance, slope instability, improper drainage, and inadequate sewage treatment.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See 1.9, Resources, Policy 11, of the Kern County General Plan, above.
Policy 1: New development within the 100-year floodplain shall be regulated in accordance with the Floodplain Management Section of the Department of Planning and Development Services according to the Flood Damage Prevention Ordinance, the Kern Land Division Ordinance, and the Kern County Zoning Ordinance as may be amended from time to time.	Consistent with implementation of Mitigation Measure MM 4.10-1.	As described in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the project would be developed in accordance with the General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the proposed project would be consistent with this measure.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 7: Compliance with site-specific issues, goals, policies, and implementation measures contained in the Seismic/Safety Element of the Kern County General Plan.	Consistent.	See Chapter 4, Safety Element, of the Kern County General Plan, above.
Policy 9: All new construction in the plan area shall comply with Chapter 23 of the Uniform Building Code (UBC), which includes building pad and foundation design standards for structures in UBC Seismic Zone IV.	Consistent.	Construction of the proposed project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08) and Chapter 23 of the International Building Code (which replaced the UBC). Compliance with this policy would be ensured upon final review by the Kern County Public Works Department.
Measure 3: Areas within the 100-year floodplain shall be zoned with the appropriate FPP, FP, or FPS designation.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See Seismic Safety and Safety Element, Goal 7, of the Willow Springs Specific Plan, above.
Measure 4: New development within the 100-year floodplain shall be regulated in accordance with the Flood Damage Prevention Ordinance and the Kern County Zoning Ordinance as they may be amended from time to time.	Consistent with implementation of Mitigation Measures MM 4.9-1 and MM 4.10-1.	Water quality impacts are evaluated in Section 4.10, *Hydrology and Water Quality,* of this EIR. Consistent with this policy, the proposed project would implement best management practices during construction to avoid impacts to water quality. The project would also implement a Hazardous Materials Business Plan to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.
Measure 24: In order to combat the stormwater pollution created by the various land uses the following source control mitigation measures are required: a) Periodic cleaning (i.e., street sweeping) of paved areas to remove small particle size sediments with absorbed pollutants caused by uses of the area. b) Utilize established Best Management Practices (BMPs) for small on-site control of urban runoff water quality. These measures include infiltration trenches, infiltration basins, water quality inlets, vegetative biofilter, grass swales, and porous pavement.	Consistent with implementation of Mitigation Measure MM 4.10-1.	See Seismic Safety and Safety Element, Goal 7, of the Willow Springs Specific Plan, above.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Public Facilities Element		
Goal 3: To restrict, if possible, any further and/or unnecessary drawdown of the water table within the plan area.	Consistent.	Public utility impacts are evaluated in Section 4.17, *Utilities and Service Systems*, of this EIR. As described therein, the project site is located within the Antelope Valley Groundwater Basin which has undergone adjudication, which restricts unnecessary drawdown of the basin water table. 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 project would be minimal and would be obtained from an existing source with existing water rights, impacts related to water supply would be less than significant. Thus, the project would be consistent with this goal.
Policy 2: In evaluating a development application, Kern County will consider both its physical and fiscal impact on the local school district and other public facilities. If it is found that the district or facilities involved will, as a result, require additional facilities or incur costs requiring additional local revenues, the development project will be required as a condition of approval to contribute funds to the district for the costs directly attributable to the project.	Consistent.	See Public Facilities Element, Goal 4, above. Further, public service impacts are evaluated in Section 4.14, *Public Services,* of this EIR.
Policy 4: New 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.	Impacts to public services are evaluated in Section 4.14, *Public Services*, of this EIR. Consistent with this policy, the project would implement Mitigation Measure MM 4.14-2 which would require the project to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 5: Operation of any solid waste facility shall comply with standards provided by the Kern County Solid Waste Management Plan.	Consistent with implementation of Mitigation Measure MM 4.17-1.	Consistent with this policy, the proposed project would develop a solar PV power generating facility that would not operate a solid waste facility. As discussed in Section 4.17, *Utilities and Service Systems*, of this EIR, the proposed project would be served by Kern County Waste Management and would comply with construction waste diversion requirements implemented by the County. Additionally, 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 project.
Measure 6: The siting and establishment of solid waste transfer stations, landfills, recycling center, and cleanup programs shall be in accordance with Kern County's Solid Waste Management Plan.	Consistent with implementation of Mitigation Measure MM 4.17-1.	See Public Facilities Element, Policy 5, above. Further, utility and service systems impacts are evaluated in Section 4.17, *Utilities and Service Systems,* of this EIR.
Measure 10: New development shall contribute its pro rata share for circulation improvements, school impact fees, park land dedications/fees, and possible biota impact fees. As additional impact fees are adopted, they shall be incorporated into the Specific Plan text.	Consistent with implementation of Mitigation Measure MM 4.14-2.	Consistent with this policy, the project proponent would fund improvements to on-site driveways that provide access to County, city, or State roads. The project would implement Mitigation Measure MM 4.14-2 which would require the project to provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities. The project would also implement Mitigation Measures MM 4.14-3 and MM 4.14-4, if the project is sold to a city, county, or utility company with assessed taxes that total less than $3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of $3,000 per megawatt. The amount shall be paid for all years of operation.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure 11: The school district, along with the developer, shall provide Kern County with an alternative funding method, should an alternative be submitted with an impending development.	Consistent.	See Public Facilities Element, Goal 4, above. Further, public service impacts are evaluated in Section 4.14, *Public Services,* of this EIR.
Measure 21: The projects shall comply with all applicable Kern County code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.	Consistent with implementation of Mitigation Measure MM 4.14-1.	Consistent with this policy, the project would be required to comply with the County adopted Fire Code and the requirements of the Kern County Fire Department applicable for construction, access, water mains, fire flows, and fire hydrant.
Measure 24: Consideration shall be given to implementation of the following measure to reduce the impacts associated with solid waste generation: a) Compacting refuse would substantially reduce the number of refuse hauling trips and allow for more effective and sanitary disposal. b) Each project applicant shall comply with guidelines set forth by Kern County in accordance with AB 939 which mandates recycling programs for each jurisdiction in California and shall agree to be subject to universal collection for one- to four-unit residential projects and commercial. c) Where feasible, a community recycling center should be implemented to provide convenient recycling opportunities. d) Studies shall be conducted by Kern County prior to issuance of building permits, to determine a feasible location for an alternate landfill upon reaching capacity at Mojave-Rosamond concurrent with development approvals. County should initiate studies to site alternative landfill. e) Each project applicant shall comply with guidelines set forth by Kern County in accordance with AB 939 which mandates recycling programs for each jurisdiction in California and shall agree to be subject to universal collection for one- to four-unit residential projects and commercial.	Consistent with implementation of Mitigation Measure MM 4.17-1.	Public utility impacts are evaluated in Section 4.17, *Utilities and Service Systems,* of this EIR. As described therein, 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. Additionally, the proposed project would not generate a significant amount of waste that would exceed the capacity of local landfill. With the implementation of Mitigation Measure MM 4.17-1, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during construction and operation, resulting in less than significant impact to solid waste providers.
Measure 25: The applicants are subject to school assessment fees pursuant to AB 2926.	Consistent.	See Public Facilities Element, Goal 4, above. Further, public service impacts are evaluated in Section 4.14, *Public Services,* of this EIR.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Residential		
Policy 4: Encourage the maintenance of natural vegetation until actual construction begins.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-14.	See Land Use Element, Policy 11, above. Further, biological resource impacts are evaluated in Section 4.4, *Biological Resources*, of this EIR. This EIR serves to comply with this policy and reduce potential impacts to vegetation 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 8: Require cultural resources report for those areas with a high probability for prehistoric activity.	Consistent with implementation of Mitigation Measures MM 4.5-2 and MM 4.5-3.	See Cultural Resources, Policy 15, above. Cultural resource impacts are evaluated in Section 4.5, *Cultural Resources,* of this EIR.
Noise Element		
Goal 2: To minimize disruption to the quality of life resulting from excessive noise.	Consistent.	Noise impacts, sensitive receptors and County noise thresholds are evaluated in Section 4.13, *Noise*, of this EIR. As discussed in that section, the proposed project would minimize disruption and noise impacts to sensitive receptors. Thus, the project would be consistent with this goal.
Goal 3: To maintain reasonable noise level standards, consistent with the Kern County Noise Element.	Consistent.	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with the Kern County Noise Element.
Policy 1: Noise emissions from new development will be controlled and off-site levels limited to the standards of the Kern County General Plan Noise Element.	Consistent.	See Noise Element, Goal 2 and Goal 3, above. The proposed project would be consistent with the Kern County General Plan Noise Element.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Policy 3: Land uses will be categorized in the following manner, and the noise level standards adopted in accordance with the Kern County Noise Element: • **Sensitive Land Uses.** Noise level does not affect the successful operation of these particular activities. A wide variety of uses can be included in this category, including public utilities, transportation systems, and other noise-related uses. • **Moderately Sensitive Land Uses.** Some degree of noise control must be present if these activities are to be successfully carried out. Included here are general business and recreational uses. • **Sensitive Uses.** Lack of noise control will severely impact these uses, reducing the quality of life. This category primarily contains residential uses. • **Highly Sensitive Uses.** A high degree of noise control is necessary for the successful operation of these activities. Examples include hospitals and churches.	Consistent.	See Noise Element, Goal 2 and Goal 3, above. The proposed project would be consistent with the Kern County General Plan Noise Element. Consistent with this policy, the proposed project will prepare an acoustical analysis in accordance with the requirements of Chapter 3, Noise Element, Measure G, of the Kern County General Plan.
Measure 2: The implementation measures of the Kern County Noise Element are hereby adopted by reference.	Consistent.	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the proposed project would be consistent with existing land use and zoning designations of the project site. The proposed project would be consistent with implementation measures of the Kern County Noise Element.
Circulation Element		
Goal 5: To maintain public safety within the plan area by providing a more direct and efficient circulation system for law enforcement and fire protection vehicles.	Consistent with implementation of Mitigation Measure MM 4.15-1.	Section 4.15*, Transportation,* of this EIR, provides a discussion of circulation and preparation of a Traffic Control Plan. The project would include internal service roads. Consistent with this goal, all road improvements would be completed per Caltrans and/or County code and regulations. Additionally, Mitigation Measure MM 4.15-1, states that the Traffic Control Plan would ensure access for emergency vehicles to the project site.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Goal 7: To provide an adequate circulation system which will support the proposed land uses.	Consistent with implementation of Mitigation Measure MM 4.15-1.	See Circulation Element, Goal 5, above. Further, transportation and circulation impacts are evaluated in Section 4.15, *Transportation,* of this EIR.
Policy 7: Require the widening of impacted roadways to handle increased traffic generated by new development.	Consistent with implementation of Mitigation Measure MM 4.15-1.	Traffic impacts are evaluated in Section 4.15*, Transportation,* of this EIR. The increased project-related traffic would not cause a significant increase in congestion and/or significantly worsen the existing service levels at intersections on area roads, therefore not necessitating the widening of roadways. 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 8: Encourage resourceful air quality improvement and reduction methods.	Consistent with implementation of Mitigation Measure MM 4.3-1.	See Section 4.3, *Air Quality,* of this EIR. The project would implement Mitigation Measure MM 4.3-1, which encourages resourceful air quality improvement and reduction methods. Mitigation Measure MM 4.3-1 would require that off-road equipment engines over 25 horsepower be equipped with EPA Tier 3 or higher engines if locally available. Mitigation Measure MM 4.3-1 also outlines other specific measures to ensure that all equipment is used efficiently, such as reducing idling time and maintain all equipment in accordance with the manufacturer's specifications.
Measure 9: A traffic study in accordance with the requirements of Kern County and CalTrans, as appropriate, shall be submitted for all discretionary projects. Study shall demonstrate consistency with the Willow Springs Specific Plan.	Consistent with implementation of Mitigation Measure MM 4.15-1	Traffic impacts are evaluated in Section 4.15*, Transportation,* of this EIR. Consistent with this measure, 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.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
Measure 13: The Traffic Impact Fee Program implements Mitigation Measure 10 of the Willow Springs Final Environmental Impact Report (EIR).	Consistent.	Consistent with this measure, the project proponent would fund improvements to on-site driveways that provide access to County, city, or State roads.
Water Quality and Availability		
Goal 1: To ensure that new developments are provided with an adequate water supply and wastewater disposal/treatment facilities.	Consistent.	Water and wastewater impacts are evaluated in Section 4.10, *Hydrology and Water Quality*, and Section 4.17, *Utilities and Service Systems*, of this EIR. The proposed project would require water supply lines and septic systems (one for each of the O&M building(s)), in order to serve restrooms for the estimated 20 full-time equivalent employees that would be on the project site during the operational phase. Furthermore, the aforementioned water supply lines and septic systems would also serve restroom facilities (located inside of commercial coaches, which would be onsite during the construction phase) which would be accessible to the limited number of personnel with access to those commercial coaches. These septic systems would treat sewage and would provide limited recharge to the nearby aquifer. These septic systems would be constructed in accordance with Kern County Public Health Services Department requirements. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed. However, portable toilets and hand washing facilities are also proposed (during the construction phase), which would be serviced by truck and any resulting wastewater would be disposed of at an approved off-site disposal facility. The water supply for the project during construction and operations would be supplied from one or more of the following options: 1) potential and/or existing well(s) on each individual facility site and/or well(s) which may be shared by the two facilities; 2) existing well(s) on the Willow Springs Solar project site. If water is supplied from the Willow Springs project site, it will be piped via temporary construction pipeline(s) or trucked; and 3) trucked Antelope Valley-East Kern

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
		Water Agency (AVEK) water collected at one of the nearby locations owned by AVEK.
Policy 1: Water supply method and wastewater disposal/treatment facility shall be as required by Kern County.	Consistent.	See Water Quality and Availability, Goal 1, of the Willow Springs Specific Plan, above.
Policy 2: Separate environmental documentation shall be required for the methods of water supply and wastewater disposal/treatment selected.	Consistent.	See Water Quality and Availability, Goal 1, of the Willow Springs Specific Plan, above.
Measure 4: The individual project applicants shall adhere to the following guidelines as established by the Department of Water Resources for flood damage prevention: -The slope and foundation designs for all structures shall be based on detailed soils and engineering studies.	Consistent with implementation of Mitigation Measure MM 4.10-1.	As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project would be required to adhere to the Kern County Development Standards and Kern County Code of Building Regulations which require site drainage plans that include development standards designed to protect water quality. Specifically, the project proponent would be required to prepare and submit a drainage plan to the Kern County Public Works Department, for approval of post-construction structural and nonstructural BMPs that could include LID features such as drainage swales for collection of runoff prior to offsite discharge. Routine structural BMPs are intended to address water quality impacts related to drainage that are inherent in development. As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, the proposed project would likely require one or more retention basins to meet County drainage requirement. Consistent with this policy, the proposed project would require the submission of a drainage plan to the County for review and would implement Mitigation Measure MM 4.10-1, which requires a final hydrologic study and drainage plan designed to evaluate and minimize potential increases in runoff from the project site.

TABLE 4.11-3: CONSISTENCY ANALYSIS WITH WILLOW SPRINGS SPECIFIC PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
General Provision		
Goal 9: Fire flow provisions and on-site fire protection standards (i.e., sprinklers/water storage) shall be in compliance with minimum standards provided by the Kern County Fire Department.	Consistent with implementation of Mitigation Measures 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 provide a Cumulative Impact Charge (CIC) to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities.

Section 4.12
Mineral Resources

4.12.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for mineral resources. It also describes the impacts on mineral resources that would result from implementation of the proposed project, and mitigation measures that would reduce these impacts, if applicable. Information used in the preparation of this section includes: the California Department of Conservation California Geological Survey (CGS), California Geologic Energy Management Division (CalGEM) [Prior to January 1, 2020, CalGEM was known as the California Division of Oil, Gas, and Geothermal Resources (DOGGR)], and Kern County publications and maps as cited throughout this section.

4.12.2 Environmental Setting

This section discusses the existing conditions related to mineral resources within the region and project area, including the project site.

Regional Setting

Mineral and petroleum resources are basic to Kern County's economy; Kern County produces more oil than any other county in California. Borax, cement and construction aggregates constitute major economic mineral resources. The Surface Mining and Reclamation Act of 1975 (SMARA) requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to its known or inferred mineral potential. In 1999, the State Geologist analyzed 2,971 square miles of land in Kern County to determine the location of mineral resource zones throughout the County. The MRZ categories are defined as follows (CGS, 1999a):

- **MRZ-1:** Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2a:** Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves. Land included in MRZ-2a is of prime importance because it contains known economic mineral deposits.
- **MRZ-2b:** Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain inferred mineral resources as determined by their lateral extension from proven deposits or their similarity to proven deposits. Further exploration could result in upgrading areas classified MRZ-2b to MRZ-2a.
- **MRZ-3a:** Areas containing known mineral occurrences of undetermined economic significance. Further exploration could result in reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.

- **MRZ-3b:** Areas containing inferred mineral occurrences of undetermined economic significance. Further exploration could result in the reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.
- **MRZ-4:** Areas containing no known mineral occurrence.

Table 4.11-1, *Classified Mineral Resources within Kern County*, demonstrates the classified mineral resources within Kern County that are part of the MRZ-2 group and, therefore, have a demonstrated mineral significance (as opposed to the MRZ-3 group, which has an undetermined mineral significance).

TABLE 4.12-1: CLASSIFIED MINERAL RESOURCES WITHIN KERN COUNTY

Mineral Resource	MRZ Classification	Number of Areas	Total Acreage
Borates	MRZ-2a and 2b	2	2,564
Limestone	MRZ-2a	4	2,008
Limestone	MRZ-2b	2	157
Silica	MRZ-2a	1	119
Pozzolan (essential cement additive)	MRZ-2b	1	72
Gold	MRZ-2a	3	849
Gold	MRZ-2b	8	6,619
Dimension Stone	MRZ-2a	2	527

SOURCE: CGS, 1999a.

Petroleum Resources

As mentioned above, Kern County produces more oil than any other county in California. The valley floor area of Kern County and the surrounding lower elevations of the mountain ranges contain numerous deposits of oil and gas resources, a major economic resource for the County. The proposed project is not located within a known oil production field, nor does the site have known active or abandoned wells (CalGEM, 2020). Additionally, the project site is not located within a designated mineral and petroleum resource site within the Kern County General Plan. The project site is not located within the NR (Natural Resources) or PE (Petroleum Extraction) zoned districts. No significant petroleum resources have been discovered to date in the eastern Mojave Desert.

Sand and Gravel

Construction aggregates are a major economic mineral resource for Kern County (Kern County, 2009). 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 22 miles north of the project site. There are also alluvial fan deposits along the north flank of the San Emidio and Tehachapi Mountains at the southern end of the County (CGS, 1999a), approximately 40 miles west and 10 miles north of the project site, respectively. Most of the recent alluvium in the San Joaquin Valley floor is composed of sand used as a source of road base material. Areas in the vicinity of the project site and the project site also contain sand and gravel; soils on the project site consist of gravelly sand (Terracon, 2019).

Borax

Borax constitutes a major economic mineral resource for Kern County (Kern County, 2009). Borax, a borate mineral (a compound that contains Boron and oxygen), was discovered and put into production in 1872 in Nevada and later, in 1881, in Death Valley. Ironically, for five years the route traveled by Pacific Coast Borax Company's famous twenty mule team trains would pass within 15 miles of a buried deposit that would produce in about six minutes the equivalent tonnage hauled by the mule team during each trip. The discovery of borates in southeastern Kern County in the Kramer District was accidental, when a water well penetrated lakebeds containing colemanite (calcium borate) in 1913. In 1927 underground mining of the minerals kernite and borax began and continued until 1957, when underground operations ceased and open-pit mining began, eventually becoming the largest open-pit mine in California (State Mine ID #91-15-0022). This mine 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

Carbonate rocks were initially quarried in 1888 as a source of lime. By 1909 the limestone resources were used for the manufacture of Portland cement during the construction of the first Los Angeles aqueduct. Limestone has been mined continuously since 1921, just northeast of Tehachapi, for the manufacture of Portland cement. The Tehachapi Plant was joined by California Portland Cement Company's Mojave Plant in 1955 and National Cement Company's Lebec Plant in 1976, making Portland cement production second only to borates in terms of economic importance to the region. Cement production is a major economic resource in the County (CGS, 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 which have been utilized 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 (CGS, 1999a).

Precious Minerals (Gold and Silver)

In terms of total dollar value and number of deposits, gold is the most important metallic mineral commodity that has been mined in Kern County. The earliest mining in Kern County was in 1851 at placer gold deposits in Greenhorn Gulch, which drains into the Kern River about midway between Democrat Springs and

Miracle Hot Springs. The first lode mining was in 1852, and by 1865 gold was being mined in four districts around the Kern River. Gold was first prospected in eastern Kern in the 1860s, with the two largest mines being established in the 1890s. The Yellow Aster and Golden Queen mines located in eastern Kern have yielded almost half of the total gold output of the county. The principal sources of silver in Kern County have been deposits in eastern Kern County. Although gold is the chief mineral in value, silver is predominant by a 5:1 ratio and is an important by-product of the gold ore (CGS, 1999a).

Silica and Pozzolan

Pozzolan is defined as a porous variety of volcanic tuff or ash used in making hydraulic cement. Silica is a common material used to manufacture cement when it is combined with limestone, shells, and chalk (PCA, 2019). Regarding existing silica mineral resources, there is an existing quartzite body used by California Portland Cement Company in making cement. The quartzite has a drill indicated reserve of about eight million tons. An area on property controlled by Calaveras Cement Company (now known as the Lehigh Southwest Cement Company [Lehigh, 2002]) was under evaluation as an area containing pozzolan in 1998 (Koehler, 1999a). A Surface Mining and Reclamation Plan for the extraction of pozzolan, for an area approximately 17 miles southwest of the City of Ridgecrest, was received by the Kern County Planning and Natural Resources Department (CUP 1, Map 92); an Early Consultation was circulated in accordance with CEQA in 2013 and on December 16, 2014 the Lehigh Southwest Cement Company was approved to be designated as an engineered municipal solid waste (EMSW) facility (CEQAnet, 2020).

Local Setting

The project site is currently undeveloped (with the exception of two residences and residential accessory structures) and is located 5.5 miles west of the unincorporated community of Rosamond. The surrounding project area consists of undeveloped, privately-owned land, sparse residential dwellings, solar facilities, and dirt roads. The project site is not designated as a mineral recovery area by the Kern County General Plan, nor is it identified as a mineral resource zone (MRZ) by the Department of Conservation's State Mining and Geology Board. Neither the project site or adjacent areas include land classified as a MRZ (USGS, 2020). The closest potential mineral resource areas, designated by Willow Springs Specific Plan as 8.4 Mineral and Petroleum (Minimum 5 Arce Parcel Size), is approximately 1.25 miles east of the Chaparral Solar Facility site and approximately 3 miles east of the Rabbitbrush Solar Facility site. There are no known oil, gas, or geothermal wells on the project site (CalGEM, 2020). Additionally, there are no active mines or petroleum extraction facilities within or immediately adjacent to the project site (USGS, 2020). The nearest mines to the project site is the Desert Rock Milling Co. Quarry, which is a past producer of crushed and broken stone, located approximately 0.33-miles west of the project site, and Willow Springs Pit, with a history of sand and gravel mining, is located approximately located 2.23-miles north of the project site. Both of these mines are classified as past producers (USGS, 2020).

Other mines in the area include the Mojave Pit that has a history of sand and gravel and is located approximately 2.27-miles north of the project site. The Jumpin Claim is a uranium mine in Kern County located approximately 3 miles east of the project site at an elevation of 2,976 feet. **Figure 4.12-1**, *Mines within the Project Vicinity*, shows the mines within a 3-mile radius of the project area. **Table 4.12-2**, *Mines within the Project Vicinity*, lists the mines within a 3-mile radius of the project area, their status, and the commodity being mined.

TABLE 4.12-2: MINES WITHIN THE PROJECT VICINITY

Mine Title	Status	Commodity	Distance from Project Site
Desert Rock Milling Co. Quarry	Past Producer	Stone	0.33 miles west of the Chaparral Solar Facility
Willow Springs Pit	Past Producer	Sand and gravel; construction	2.23 miles north of the Chaparral Solar Facility
Mojave Pit	Past Producer	Sand and gravel; construction	2.27 miles north of the Chaparral Solar Facility
Goldenrod Prospect	Past Producer	Uranium	2.50 miles northeast of the Chaparral Solar Facility
Milwaukee Mine	Past Producer	Gold	2.30 miles east of the Chaparral Solar Facility
Milwaukee Prospect	Past Producer	Gold	2.56 miles east of the Chaparral Solar Facility
Jumpin Claim	Prospect	Uranium	3 miles east of the Chaparral Solar Facility

SOURCE: USGS, 2020.

4.12.3 Regulatory Setting

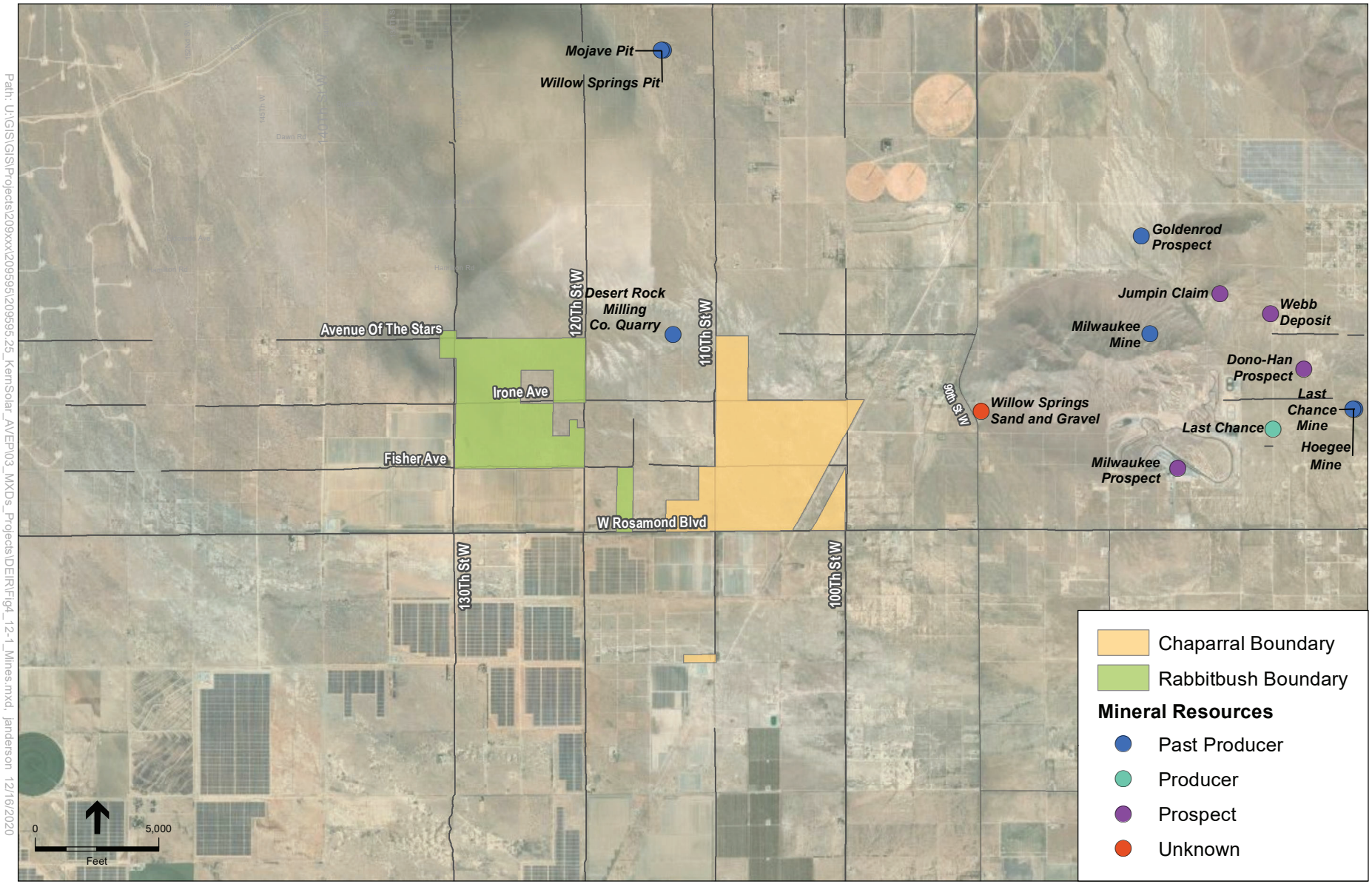
Federal

There are no applicable federal regulations for this issue area.

State

Geologic Energy Management Division

The California Department of Conservation/CalGEM is a State agency responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. CalGEM's regulatory program promotes the wise development of oil, natural gas, and geothermal resources in California through sound engineering practices, prevention of pollution, and implementation of public safety programs. To implement this regulatory program, CalGEM requires avoidance of building over or near plugged or abandoned oil and gas wells, or requires the remediation of wells to current CalGEM standards (DOC, 2019a).



Path: U:\GIS\GIS\Projects\209xxx\209595\209595.25_KernSolar_AVEP\03_MXDs_Projects\DEIR\Fig4_12-1_Mines.mxd, janderson 12/16/2020

Figure 4.12-1: MINES WITHIN THE PROJECT VICINITY

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 encourages the production, conservation, and protection of the state's mineral resources, recognizes that "the state's mineral resources are vital, finite, and important natural resources and the responsible protection and development of these mineral resources is vital to a sustainable California" (Public Resources Code, Section 2711), and 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 Local agencies use the classification information when developing land-use plans and when making land-use decisions that could preclude mining (DOC, 2018a). MRZs are defined in detail in the Regional Setting, above.

Local

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for mineral resources applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

Chapter 1. Land Use, Open Space and Conservation Element

1.9. Resource

Goals

Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations that will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources or diminish the other amenities that exist in the County.

Goal 2: To protect areas of important mineral, petroleum, and agricultural resource potential for future use.

Goal 3: To ensure that the development of resource areas minimizes effects of neighboring resource lands.

Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

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).

Willow Springs Specific Plan

The Willow Springs Specific Plan was adopted in 1992 and amended in 2008 as part of the Land Use, Open Space, and Conservation Element of the Kern County General Plan. Its goals, policies, and standards are compatible with those of the General Plan, but are tailored to the particular needs of the expanded Willow Springs area. The purpose of the Willow Springs Specific Plan is to define the planning requirements of a designated area to ensure orderly development (Kern County, 2008).

The Willow Springs Specific Plan includes the following policies related to mineral resources:

Open Space and Conservation Element

Goal

Goal 1: Resource lands should be maintained in an undeveloped state until lands more suitable for development have been made use of.

4.12.4 Impacts and Mitigation Measures

Methodology

The project's potential impacts to mineral resources have been evaluated using a variety of sources, including a review of information from the California Department of Conservation, CGS, and Kern County publications and maps. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project could have a significant adverse effect on mineral resources if it would:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Project Impacts

Impact 4.12-1: The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State.

The project site is not located on lands designated as MRZs by the State. The project site is not designated as land that contains mineral resources, and any proposed mineral resource extraction would require a Conditional Use Permit to be secured from Kern County. The closest land designated as Map Code 8.4 (Mineral and Petroleum – Minimum 5 Acre Parcel Size) is approximately 1.25 miles east of the Chaparral Solar Facility site and approximately 3 miles east of the Rabbitbrush Solar Facility site. Additionally, no active mines or petroleum extraction facilities are located within or immediately adjacent to the project site. As identified in **Table 4.12-2**, *Mines within the Project Vicinity*, the nearest past producer mine to the project site is the Desert Rock Milling Co. Quarry which is located approximately 0.33-mile west of the project site, and the nearest prospective mine is the Jumpin Claim Mine which is approximately 3 miles east of the Chaparral Solar Facility project site. Given these distances, the proposed project would not interfere with nearby mine sites and would not result in the loss of land designated for mineral resources. Furthermore, based on the absence of historical surface mining in the immediate area, the potential for surface mining at the project site is considered extremely low. Therefore, the project would not result in the loss of availability of a known mineral resource and the potential impact to future mineral resources is less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.12-2: 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 a locally important mineral resource recovery site delineated by the Kern County General Plan or Willow Springs Specific Plan. While there are nearby mineral resource recovery sites, the operation of such sites would not be impeded by the development of the proposed project. Therefore, loss of availability of mineral resources impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Chapter 3, *Project Description*, there are 145 cumulative projects proposed or approved (117 in Kern County and 28 in Los Angeles County), including some utility-scale solar production facilities as shown in **Table 3-4**, *Cumulative Projects List*. The geographic scope of impacts associated with mineral resources generally encompasses the project site and a 0.25-mile-radius area around the project site. This scope is appropriate because of the localized nature of mineral resource impacts. The closest cumulative projects, located within 0.25 miles of the project site, are the RE Rosamond Two solar project located along the eastern boundary of the Chaparral Solar Facility site and the North Rosamond Solar Array solar project located along the southern boundary of the Rabbitbrush Solar Facility site, as shown on Figure 3-19, *Cumulative Projects Map – Kern County*, as project 16 and 17, respectively. However, the project area designated for solar panel development on the RE Rosamond Two and Rosamond Solar Array solar projects are not located on land designated as an MRZ. Furthermore, there are no MRZs or lands designated as Mineral and Petroleum areas by the Kern County General Plan or Willow Springs Specific Plan within a 0.25-mile-radius area around the project site. Therefore, the proposed project, in conjunction with other related projects, would not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site and would not contribute to any cumulative impacts to mineral resources.

Mitigation Measures

No mitigation would be required.

Level of Significance

Cumulative impacts would be less than significant.

Section 4.13
Noise

4.13.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for the proposed project and provides an analysis of potential impacts related to noise and groundborne 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 *Acoustical Assessment for the AVEP Solar Project* prepared by Michael Baker International (MBI), located in Appendix M of this EIR (MBI, 2020).

Noise Fundamentals

An understanding of the physical characteristics of sound is useful for evaluating environmental noise. The methods and metrics used to quantify noise exposure, human response, and relative judgment of loudness are also discussed, and noise levels of common noise environments are presented.

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and interferes with or disrupts normal activities. The effects of noise on people can be grouped into four general categories:

- Subjective effects (dissatisfaction, annoyance);
- Interference effects (communication and sleep interference, learning);
- Physiological effects (startle response); and
- Physical effects (hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical (i.e., to the body itself) and physiological (i.e., to body functions) effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. The subjective responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, its appropriateness to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Interference effects of environmental noise refer to those effects that interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, and telephone conversations, and interference with sleep. Sleep interference effects can include both awakening from sleep and arousal to a lesser state of sleep.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and amplitude. Frequency describes the sound's pitch (tone) and is measured in cycles per second (Hertz [Hz]), while amplitude describes the sound's pressure (loudness). Because the range of sound pressures that occurs in the environment is extremely large, it is convenient to express these pressures on a logarithmic scale that compresses the wide range of pressures into a more useful range of numbers. The standard unit

of sound measurement is the decibel (dB). Hz is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a given number of times per second. If the drum vibrates 100 times per second, it generates a sound pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived by the ear/brain as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of sensitivity of the healthy human ear.

Sound levels are expressed by reference to a specified national/international standard. The sound pressure level is used to describe sound pressure (loudness) and is specified at a given distance or specific receptor location. In expressing sound pressure level on a logarithmic scale, sound pressure (dB) is referenced to a value of 20 micropascals (µPa). Sound pressure level depends not only on the power of the source but also on the distance from the source to the receiver and the acoustical characteristics of the sound propagation path (absorption, reflection, etc.).

Outdoor sound levels decrease logarithmically as the distance from the source increases. This decrease is due to wave divergence, atmospheric absorption, and ground attenuation. Sound radiating from a source in a homogeneous and undisturbed manner travels in spherical waves. As the sound waves travel away from the source, the sound energy is dispersed over a greater area, decreasing the sound pressure of the wave. Spherical spreading of the sound wave from a point source reduces the noise level at a rate of 6 dB per doubling of distance.

Atmospheric absorption also influences the sound levels received by an observer. The greater the distance traveled, the greater the influence of the atmosphere and the resultant fluctuations. Atmospheric absorption becomes important at distances greater than 1,000 feet. The degree of absorption varies depending on the frequency of the sound as well as the humidity and temperature of the air. For example, atmospheric absorption is lowest (i.e., sound carries farther) at high humidity and high temperatures, and lower frequencies are less readily absorbed (i.e., sound carries farther) than higher frequencies. Over long distances, lower frequencies become dominant as the higher frequencies are more rapidly attenuated. Turbulence, gradients of wind, and other atmospheric phenomena also play a significant role in determining the degree of attenuation. For example, certain conditions, such as temperature inversions, can channel or focus the sound waves, resulting in higher noise levels than would result from simple spherical spreading.

Sound from a tuning fork contains a single frequency (a pure tone), but most sounds in the environment do not consist of a single frequency. Instead, they are a broad band of many frequencies differing in sound level. Because of the broad range of audible frequencies, methods have been developed to quantify these values into a single number representative of human hearing. The most common method used to quantify environmental sounds consists of evaluating all frequencies of a sound according to a weighting system that is reflective of human hearing characteristics. Human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This process is termed “A weighting,” and the resulting dB level is termed the “A-weighted” decibel (dBA).

Because A-weighting is designed to emulate the frequency response characteristics of the human ear and reflect the way people perceive sounds, it is widely used in local noise ordinances and State and federal guidelines, including those of the State of California and Kern County. Unless specifically noted, the use of A-weighting is always assumed with respect to environmental sound and community noise, even if the notation does not include the “A.”

In terms of human perception, a sound level of 0 dBA is the threshold of human hearing and is barely audible by a healthy ear under extremely quiet listening conditions. This threshold is the reference level

against which the amplitude of other sounds is compared. Normal speech has a sound level of 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as discomfort, progressing to pain at still higher levels. Humans are much better at discerning relative sound levels than absolute sound levels. The minimum change in the sound level of individual events that an average human ear can detect is about 1 to 3 dBA. A 3 to 5 dBA change is readily perceived. An increase (or decrease) in sound level of about 10 dBA is usually perceived by the average person as a doubling (or halving) of the sound's loudness.

Because of the logarithmic nature of the decibel, sound levels cannot be added or subtracted directly. However, some simple rules are useful in dealing with sound levels. First, if a sound's acoustical energy is doubled, the sound level increases by 3 dBA, regardless of the initial sound level (e.g., 60 dBA + 60 dB = 63 dBA; 80 dBA + 80 dBA = 83 dBA). However, an increase of 10 dBA is required to double the perceived loudness of a sound, and a doubling or halving of the acoustical energy (a 3 dBA difference) is at the lower limit of readily perceived change.

Although dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most ambient environmental noise includes a mixture of noise from nearby and distant sources that creates an ebb and flow of sound, including some identifiable sources plus a relatively steady background noise in which no particular source is identifiable. A single descriptor, termed the equivalent sound level (L_{eq}), is used to describe sound that is constant or changing in level. L_{eq} is the energy-mean dBA during a measured time interval. It is the "equivalent" sound level produced by a given constant source equal to the acoustic energy contained in the fluctuating sound level measured during the interval. In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum instantaneous (L_{max}) and minimum instantaneous (L_{min}) noise level indicators that represent the root-mean-square maximum and minimum noise levels measured during the monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the acoustic floor for that location.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors L_{10}, L_{50}, and L_{90} may be used, which represent the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of the measured time interval, respectively. Sound levels associated with L_{10} typically describe transient or short-term events, L_{50} represents the median sound level during the measurement interval, and L_{90} levels are typically used to describe background noise conditions.

The Day-Night Average Sound Level (L_{dn} or DNL) represents the average sound level for a 24-hour day and is calculated by adding a 10 dBA penalty to sound levels during the night period (10:00 p.m. to 7:00 a.m.). The L_{dn} is the descriptor of choice and used by nearly all federal, State, and local agencies throughout the United States to define acceptable land use compatibility with respect to noise. Within California, the Community Noise Equivalent Level (CNEL) is sometimes used. CNEL is very similar to L_{dn}, except that an additional 5 dBA penalty is applied to the evening hours (7:00 p.m. to 10:00 p.m.). Because of the time-of-day penalties associated with the L_{dn} and CNEL descriptors, the L_{dn} or CNEL dBA value for a continuously operating sound source during a 24-hour period will be numerically greater than the dBA value of the 24-hour L_{eq}. Thus, for a continuously operating noise source producing a constant noise level operating for periods of 24 hours or more, the L_{dn} will be 6 dBA higher than the 24-hour L_{eq} value. For convenience, a summary of common noise metrics is provided in **Table 4.13-1**, *Common Noise Metrics*. To provide a frame of reference, common sound levels are presented in **Figure 4.13-1**, *Effects of Noise on People*.

TABLE 4.13-1: COMMON NOISE METRICS

Unit of Measure		Description
dB	Decibel	Decibels, which are units for measuring the volume of sound, are measured on a logarithmic scale, representing points on a sharply rising curve. For example, 10 dB sounds are 10 times more intense than 1 dB sounds, and 20 dB sounds are 100 times more intense. A 10 dB increase in sound level is perceived by the human ear as a doubling of the loudness of the sound.
dBA	A-Weighted Decibel	A sound pressure level that has been weighted to quantitatively reduce the effect of high- and low-frequency noise. It was designed to approximate the response of the human ear to sound.
CNEL	Community Noise Equivalent Level	A metric representing the 24-hour average sound level that includes a 5 dBA penalty during relaxation hours (7:00 p.m. to 10:00 p.m.) and a 10 dBA penalty for sleeping hours (10:00 p.m. to 7:00 a.m.).
L_{dn}	Day-Night Average Noise	The 24-hour average sound level, expressed in a single decibel rating, for the period from midnight to midnight obtained after the addition of a 10 dBA penalty to sound levels for the periods between 10:00 p.m. and 7:00 a.m.
L_{eq}	Equivalent Noise Level	The average acoustic energy content of noise for a stated period of time. The L_{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L_{eq} may also be referred to as the average sound level.
L_{max}	Maximum Noise Level	L_{max} represents the maximum instantaneous noise level experienced during a given period of time. It reflects peak operating conditions and addresses the annoying aspects of intermittent noise.
L_{min}	Minimum Noise Level	L_{min} represents the minimum instantaneous noise level experienced during a given period of time. It reflects baseline operating conditions and is commonly referenced as the noise floor.
L_1, L_{10}, L_{50}, L_{90}	Percentile Noise Exceedance Levels	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period.

Vibration Fundamentals

As described in the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual* (FTA, 2018), groundborne 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, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operation of heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV), measured in inches per second (in/sec), is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe structural vibration impacts to buildings. The root mean square (RMS) amplitude, measured in decibel notation (VdB), is defined as the average of the squared amplitude of the signal, which is most frequently used to describe human annoyance impacts.

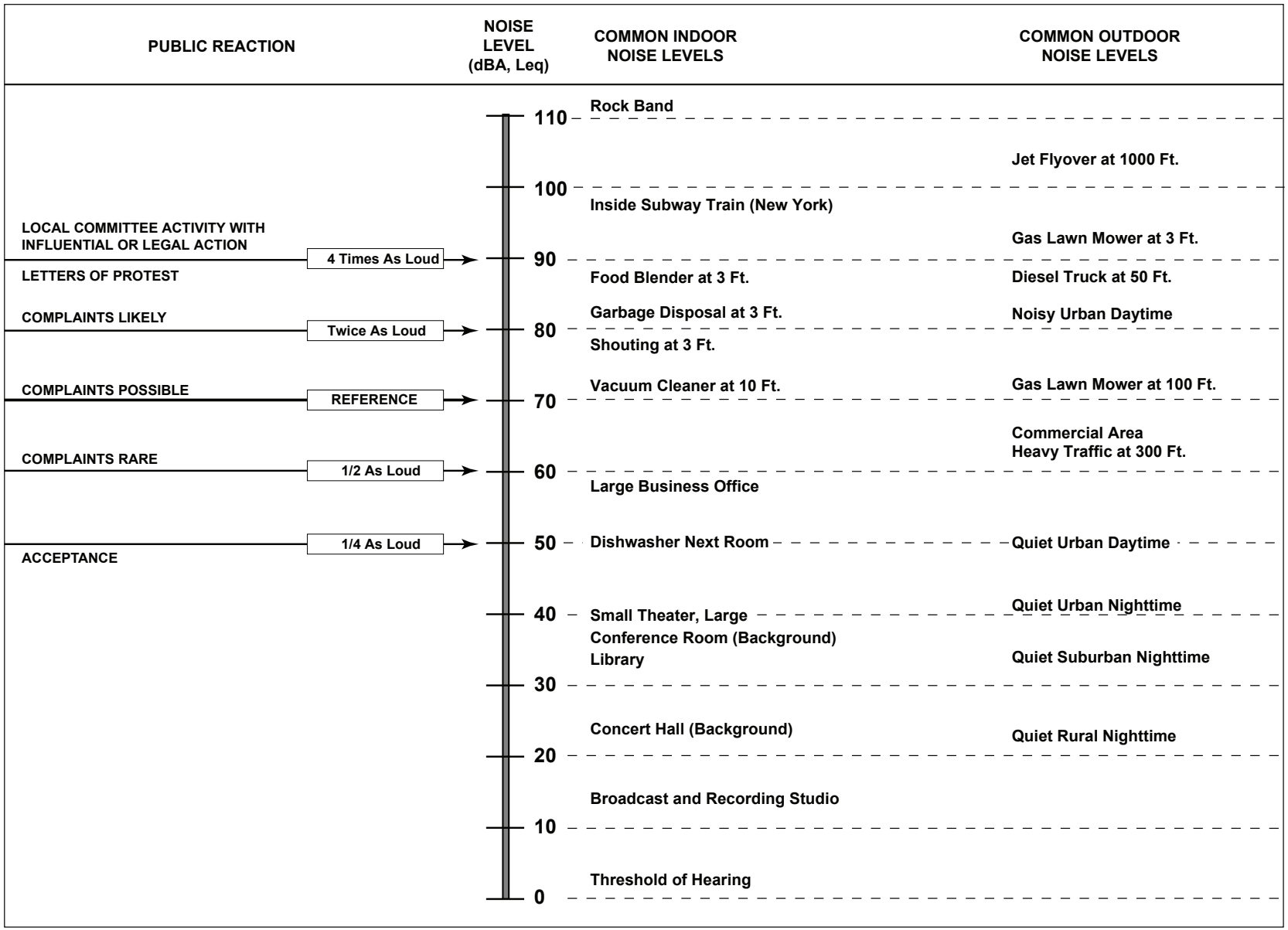


FIGURE 4.13-1: EFFECTS OF NOISE ON PEOPLE

Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. PPV is typically a factor of 1.7 to 6 times greater than RMS vibration velocity therefore, the decibel notation acts to compress the range of numbers required to describe vibration (FTA, 2018). The decibel notation acts to compress the range of numbers required to describe vibration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration sensitive equipment.

The effects of groundborne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Human annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. However, a vibration level that causes annoyance will be well below the damage thresholds for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 in/sec PPV, while the standard for even the most sensitive and fragile structures is 0.12 in/sec PPV (FTA, 2018).

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold 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 for many people (FTA, 2018).

4.13.2 Environmental Setting

Project Location

The proposed project is located in southeastern Kern County, approximately 5.5 miles west of the unincorporated community of Rosamond, CA in the northwestern portion of the Mojave Desert. The project site is located 8 miles west of SR-14 (Antelope Valley Freeway) and approximately 6 miles north of SR-138. The project consists of two sites: the Chaparral Solar Facility and the Rabbitbrush Solar Facility. Collectively, these sites are referred to as the project site. The facilities are located on land which is undeveloped (with the exception of two residences and residential accessory structures) and privately-owned:

- The approximately 774-acre Chaparral Facility is generally bordered to the south by Rosamond Boulevard, to the east by 100th Street West, to the north by Avenue of the Stars, and to the west by 100th Street West. The Facility also includes a non-contiguous 10-acre parcel located at the northwest corner of the intersection of 110th Street West and Holiday Avenue, across from the existing Willow Springs substation.

- The approximately 632-acre Rabbitbrush Solar Facility comprises two proximate but non-contiguous land areas (eastern and western) and is generally bordered to the south by Rosamond Boulevard, to the east by 115th Street West to the east, to the north by Avenue of the Stars and to the west by 130th Street West.

The project site is generally flat desert vegetation. The area surrounding and in the vicinity of the project site includes open desert, fallow agriculture, active agriculture (irrigated and dry land), low-density residential, transmission infrastructure and renewable energy development.

Existing Noise Environment

The existing noise environment of the project site is characteristic of its location and adjacent noise sources. The proposed project is located approximately 5.5 miles west of the unincorporated community of Rosamond, CA, and 8 miles west of SR-14 and approximately 6 miles north of SR-138. The two solar facilities are bounded to some extent by local roadways. The closest airport to the Chaparral and Rabbitbrush Solar Facilities is Lloyd's Landing, a private airport approximately 0.52 miles northeast of Chaparral Solar Facility and 3 miles to the northeast of the Rabbitbrush Solar Facility. Other than Lloyd's Landing, the nearest airports to the project sites are the privately owned Rosamond Skypark approximately 5.5 miles to the east, the Mojave Air and Space Port approximately 15 miles to the northeast, and the Mountain Valley Airport (a private airport which allows public access) approximately 15 miles to the north. 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) (County of Kern, 2012). Therefore, the existing noise environment in the project area is defined primarily by vehicular traffic on area roadways, residential land uses, intermittent small aircraft overflights, and bird vocalizations. Daytime ambient noise levels would be anticipated to be generally characteristic of rural areas.

To characterize ambient noise levels in the vicinity of the project site, three noise measurements were conducted by Ecology and Environment, Inc. on Monday and Tuesday, April 10–11, 2017, in proximity to the project site (MBI 2020), as shown on **Figure 4.13-2**, *Noise Measurement Locations*. **Table 4.13-2**, *Ambient Noise Level Measurements*, provides the global positioning system (GPS) locations, time of day, and measured equivalent noise level (dBA L_{eq}) at three measurement locations.

TABLE 4.13-2: AMBIENT NOISE LEVEL MEASUREMENTS

Noise Measurement Number	Noise Measurement Location (GPS Coordinates)	Time	Equivalent Noise Level (dBA L_{eq})
1	34.870375 North, 118.350851 West	3:14 p.m.	33.2
2	34.892603 North, 118.307958 West	8:05 a.m.	47.2
3	34.819925 North, 118.308520 West	11:28 a.m.	48.7

NOTE: Noise measurements were conducted by Ecology and Environment Inc. on April 10–11, 2017.

The sound-level measurements were conducted using American National Standard Institute (ANSI) Type I sound level meters. Measurements were collected for approximately 15-minute durations at each location. Measurements were collected in data sheets to record all site-specific information. High-density foam windscreens meant for long-term outdoor service were used to protect the sound level meters from rain and self-induced wind noise. Additionally, the sound level meters were located approximately 4 feet above ground. Sound level information was immediately recorded on field data sheets and saved electronically in the sound analyzer following each sampling period. Field notations were used to identify other noise sources in the area at each measurement location. Accurate measurement locations were identified using a portable GPS device. Measurement details are included in the *Acoustical Assessment* (MBI, 2020) located in Appendix M of this EIR.

As shown in **Table 4.13-2**, *Ambient Noise Level Measurements*, the measured ambient daytime noise levels ranged from approximately 33.2 to 48.7 dBA L_{eq}.

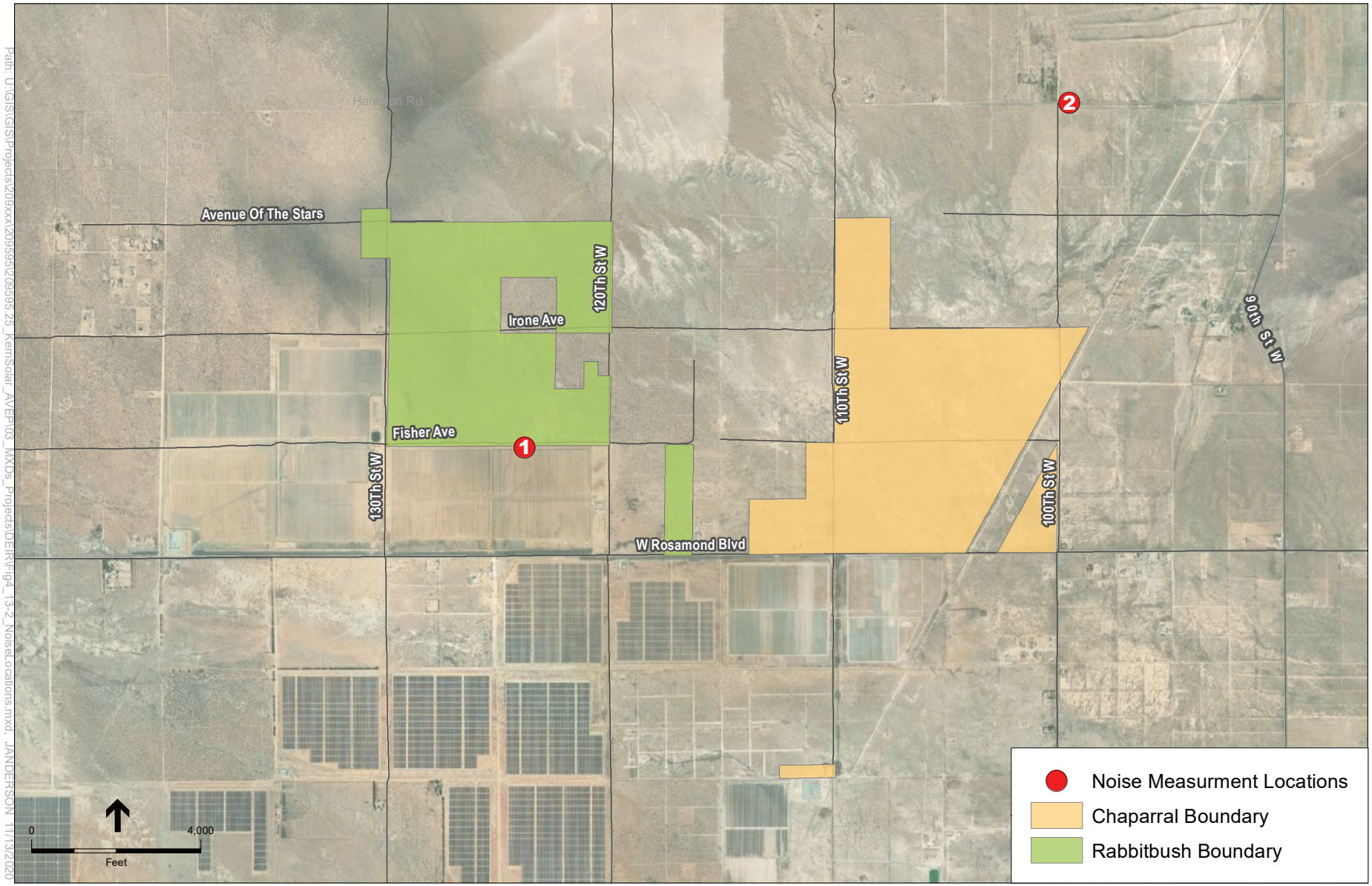


Figure 4.13-2: NOISE MEASUREMENT LOCATIONS

Noise-Sensitive Receptors

The noise-sensitive receptors in proximity to the project site consist primarily of rural single-family residences, as listed in **Table 4.13-3**, *Noise-Sensitive Receptors*, and shown in **Figure 4.13-3**, *Noise-Sensitive Receptor Locations*.

TABLE 4.13-3: NOISE-SENSITIVE RECEPTORS

Type	AVEP Solar Facility	Sensitive Receptor #	Distance from Project Site (feet)[a]	Direction from Project Site	Location
Rural Residential (very low density)	Chaparral	1	165	East	3300 100th St W Rosamond, CA 93560
		2	175	East	3144 100th St W Rosamond, CA 93560
		3	120	East	3022 100th St W Rosamond, CA 93560
		4	500	East	2929 100th St W Rosamond, CA 93560
		5	850	East	2860 100th St W Rosamond, CA 93560
		6	775	Southeast	9865–9837 Sahara Ave Rosamond, CA 93560
		7	1,575	Southeast	8550–8458 Rosamond Blvd Rosamond, CA 93560
		8	1,800	East	9668 Rosamond Blvd Rosamond, CA 93560
		9	2,200	East	9580 Rosamond Blvd Rosamond, CA 93560
		10	2,200	Northeast	4105 Manly Rd Rosamond, CA
		11	2,000	South	2613–2559 100th St W Rosamond, CA 93560
		12	2,100	South	10117–10214 Leslie Ave Rosamond, CA 93560
		13[b]	—	—	8768 Rosamond Blvd Rosamond, CA 93560
	Discontinuous 10-acre parcel and Willow Springs Substation Improvements	39 [d]	2,250	Northwest	Northeast of the Abarth Ave and 117th St W intersection
	Rabbitbrush	14	900	Southwest	11936 Rosamond Blvd Rosamond, CA 93560
		15	3,100	South	12567 Sahara Ave Rosamond, CA 93560

TABLE 4.13-3: NOISE-SENSITIVE RECEPTORS

Type	AVEP Solar Facility	Sensitive Receptor #	Distance from Project Site (feet)[a]	Direction from Project Site	Location
		16	3,000	South	9184 Rosamond Blvd Rosamond, CA 93560
		17	170	West	130th St W Rosamond, CA 93560
		18	3,100	North	Hamilton Rd Rosamond, CA 93560
		19	170c	East	APN's: 358-152-06-4 358-152-07-2
	Rosamond Substation Improvements	36 d	480	South	13956 W Rosamond Blvd Rosamond, CA 93560
		37	1,615	Southwest	14154 W Rosamond Blvd Rosamond, CA 93560
		38	1,600	West	14271 W Rosamond Blvd Rosamond, CA 93560

NOTES:

[a] Distances are measured from the exterior of the Solar Facilities boundary only and not from individual construction projects/areas within the interior of the Solar Facilities.

[b] Receptor #13 would be acquired as part of the proposed project and, therefore, is not evaluated in this Acoustical Assessment. Receptor #13 is included in Table 4.13-3 for informational purposes only.

[c] APN's 358-152-06-04 and 358-152-07-2 do not have registered street addresses and are classified as vacant lots per the Kern County Assessor-Recorder. However, based off Google Earth imagery, these parcels of land have development on-site. Thus, it is conservatively assumed in this analysis that these parcels of land have sensitive receptors on-site.

[d] Numbers out of sequence represent updated receptor list due to modifications to the project design

Bold text indicates the noise-sensitive receptors that are located near (i.e., within 1,000 feet) the project boundaries

SOURCE: Google Earth, 2018.

As shown in **Table 4.13-3**, *Noise-Sensitive Receptors,* the off-site noise-sensitive receptors nearest to the project site are residence #17 located approximately 170 feet to the west of the Rabbitbrush Facility's western boundary, residence #19 located approximately 170 feet east of the Rabbitbrush Facility's eastern boundary, residences #1, #2 and #3 approximately 120-175 feet from the Chaparral Subject Site's eastern boundary, and residence #36 approximately 480 feet from the location within the Rosamond Substation where improvements (construction) will occur.

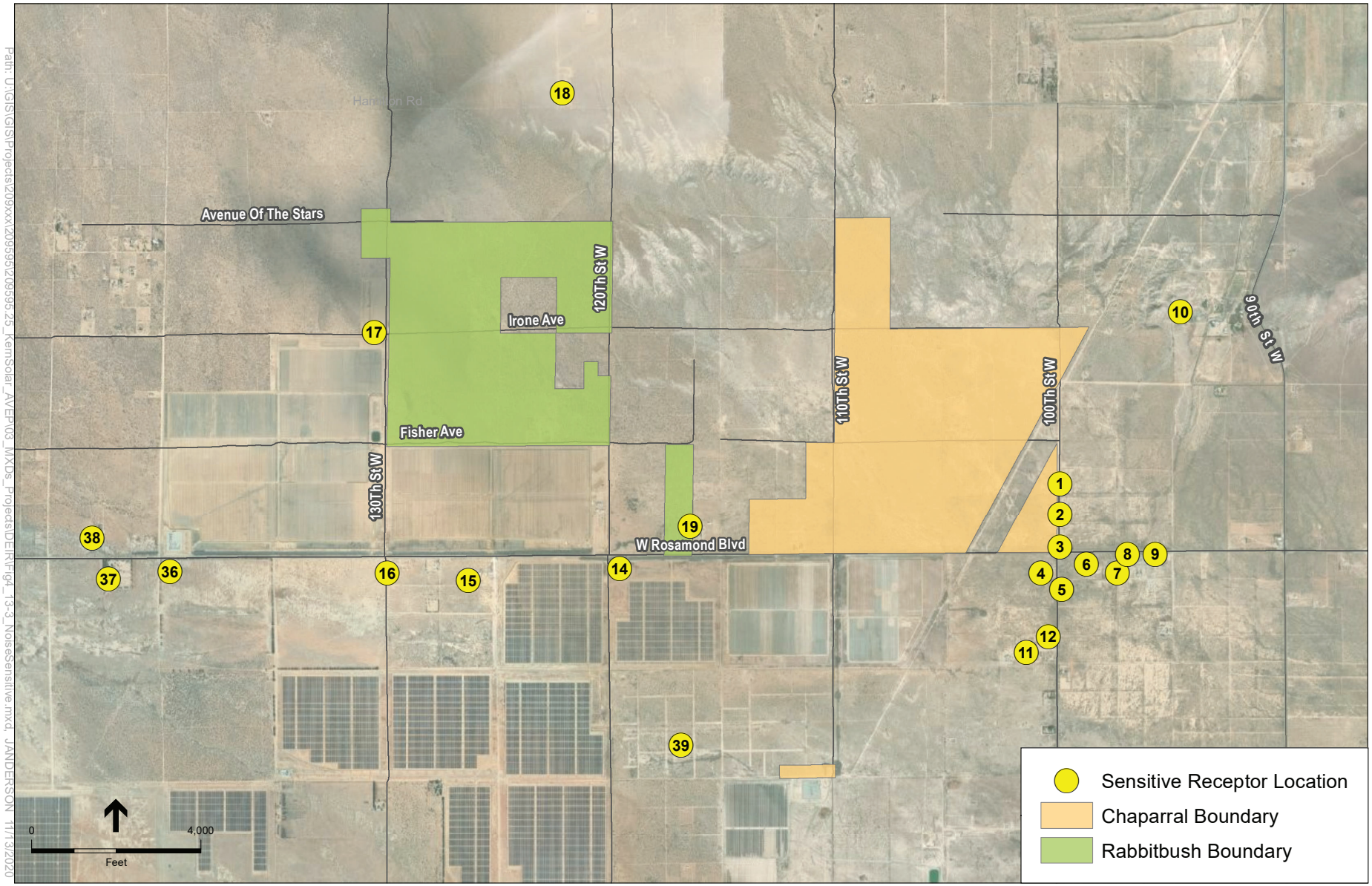


Figure 4.13-3: NOISE-SENSITIVE RECEPTOR LOCATIONS

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 dBA L_{dn}.

Federal Highway Administration Noise Abatement Procedures (23 CFR Part 772)

The purpose of 23 CFR Part 772 is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, supply noise abatement criteria, and establish requirements for information to be given to local officials for use in the planning and design of highways. It establishes five categories of noise-sensitive receptors and prescribes the use of the hourly L_{eq} as the criterion metric for evaluating traffic noise impacts.

Department of Housing and Urban Development, Environmental Standards

The Department of Housing and Urban Development (HUD) regulations (24 CFR Part 51) set forth the following exterior noise standards for new home construction, assisted or supported by HUD:

- 65 L_{dn} or less – Acceptable
- > 65 L_{dn} and < 75 L_{dn} – Normally unacceptable, appropriate sound attenuation measures must be provided
- > 75 L_{dn} – Unacceptable

HUD's regulations do not contain standards for interior noise levels. Rather, a goal of 45 dBA L_{dn} is set forth, and attenuation requirements are geared to achieve that goal.

Occupational Safety and Health Administration, Occupational Noise Exposure

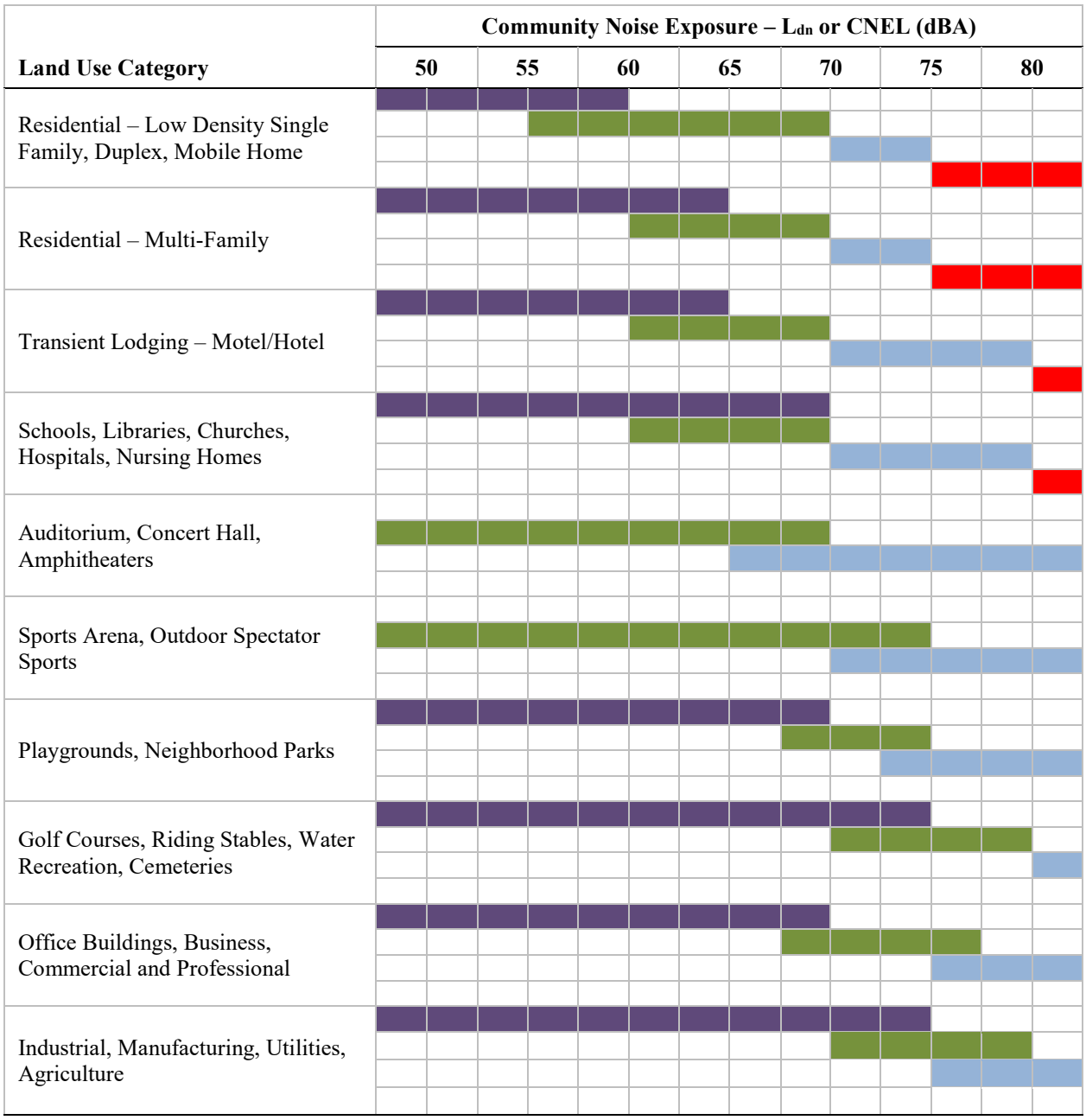
Occupational Safety and Health Administration (OHSA), *Occupational Noise Exposure; Hearing Conservation* Amendment (Federal Register 48 [46], 9738–9785, 1983) stipulates that protection against the effects of noise exposure shall be provided for employees when sound levels exceed 90 dBA over an 8-hour exposure period. Protection shall consist of feasible administrative or engineering controls. If such controls fail to reduce sound levels to within acceptable levels, personal protective equipment shall be provided and used to reduce exposure of the employee. Additionally, a Hearing Conservation Program must be instituted by the employers whenever employee noise exposure equals or exceeds the action level of an 8-hour time-weighted average sound level of 85 dBA $L_{eq(8)}$. 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. General plans must contain a noise element (California Government Code Section 65302(f) and Section 46050.1 of the Health Safety Code). The requirements for the noise element of the general plan include describing the noise environment quantitatively using a cumulative noise metric such as CNEL or DNL, establishing noise/land use compatibility criteria, and establishing programs for achieving and/or maintaining land use compatibility. Noise elements should address all major noise sources in the community, including mobile and stationary noise sources. In California, most cities and counties have also adopted noise ordinances which serve as enforcement mechanisms for controlling noise.

The California Department of Health Services has studied the correlation of noise levels and their effects on various land uses and established guidelines for evaluating the compatibility of various land uses, for the noise elements of local general plans, as a function of community noise exposure. The guidelines are the basis for most noise element land use compatibility guidelines in California.

The land use compatibility for community noise environment chart identifies the normally acceptable range for several different land uses, as shown in **Figure 4.13-4**, *Land Use Compatibility for Community Noise Environment*. Persons in low-density residential settings are most sensitive to noise intrusion, with noise levels of 60 dBA CNEL and below are considered "acceptable." For land uses such as schools, libraries, churches, hospitals, and parks, acceptable noise levels are up to 70 dBA CNEL.



Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.

SOURCE: State of California, Governor's Office of Planning and Research, 2003.

FIGURE 4.13-4: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT

CEQA Guidelines (PRC Section 21000 et seq.) requires the identification of "significant" environmental impacts and their feasible mitigation. Section XI of *CEQA Guidelines* Appendix G (CCR Title 14, Appendix G) lists some indicators of potentially significant impacts, which are included below under the heading "Thresholds of Significance."

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, 2009) 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 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 5. Energy Element

Policies

Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

Willow Springs Specific Plan

The project site is subject to the provisions of the Willow Springs Specific Plan (WSSP) in 2008, which contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Area. The noise-related policies and measures contained in the WSSP that are applicable to the project are outlined below (Kern County Department of Planning and Development Services 2008). The WSSP limits operational nighttime and daytime noise levels to 45 dBA L_{50} and 55 dBA L_{50}, respectively sensitive land uses, which includes residential uses. Additionally, the average-daily noise levels for sensitive land uses are limited to 65 dBA L_{dn}/CNEL. Construction activities would be conducted consistent with Kern County Ordinance Section 8.36.020 regarding hours of construction or as approved by Kern County.

Noise Element

Goals

Goal 2: To minimize disruption to the quality of life resulting from excessive noise.

Goal 3: To maintain reasonable noise level standards, consistent with the Kern County Noise Element.

Policies

Policy 1: Noise emissions from new development will be controlled and off-site levels limited to the standards of the Kern County General Plan Noise Element.

Policy 3: Land uses will be categorized in the following manner, and the noise level standards adopted in accordance with the Kern County Noise Element:

- **Sensitive Land Uses.** Noise level does not affect the successful operation of these particular activities. A wide variety of uses can be included in this category, including public utilities, transportation systems, and other noise-related uses.
- **Moderately Sensitive Land Uses.** Some degree of noise control must be present if these activities are to be successfully carried out. Included here are general business and recreational uses.
- **Sensitive Uses.** Lack of noise control will severely impact these uses, reducing the quality of life. This category primarily contains residential uses.
- **Highly Sensitive Uses.** A high degree of noise control is necessary for the successful operation of these activities. Examples include hospitals and churches.

Mitigation/Implementation Measures

Measure 2: The implementation measures of the Kern County Noise Element are hereby adopted by reference.

Kern County Code of Ordinances

The Kern County Code of Ordinances, Chapter 8.36 (Noise Control), includes acceptable hours of construction, and limitations on construction related noise impacts on adjacent sensitive receptors.

Chapter 8.36 of the Kern County Code of Ordinances (Kern County, 2019c) 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 9:00 p.m. to 6:00 a.m. on weekdays, and 9:00 p.m. to 8:00 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.

Groundborne Vibration

There are currently no federal, State, or local regulatory standards for groundborne vibration. However, the California Department of Transportation (Caltrans) has developed vibration criteria based on potential structural damage risks and human annoyance. While the proposed project would not be subject to Caltrans oversight, guidance by the agency nonetheless provides groundborne vibration criteria that are useful in establishing thresholds of impact. Caltrans' threshold criteria pertaining to building damage and human annoyance for continuous and transient events are summarized in **Table 4.13-4**, *Vibration Criteria for Structural Damage*, and **Table 4.13-5**, *Vibration Criteria for Human Annoyance*, respectively below.

As indicated in **Table 4.13-4**, *Vibration Criteria for Structural Damage*, 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. With regard to human perception (refer to Table 4.13-5), 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.

TABLE 4.13-4: VIBRATION CRITERIA FOR STRUCTURAL DAMAGE

Structure and Condition	Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
Newer residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

NOTES:

Transient sources create a single isolated vibration event, such as blasting or ball drops. Traffic, train, and most construction vibrations are considered continuous.
in/sec ppv = inches per second peak particle velocity

SOURCE: Caltrans, 2013.

TABLE 4.13-5: VIBRATION CRITERIA FOR HUMAN ANNOYANCE

Human Response	Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.1
Annoying to people in buildings	—	0.2
Severe	2.0	0.4

NOTES:

Transient sources create a single isolated vibration event, such as blasting or ball drops. Traffic, train, and most construction vibrations are considered continuous.
in/sec ppv = inches per second peak particle velocity
— = not available.

SOURCE: Caltrans, 2013.

4.13.4 Impacts and Mitigation Measures

Methodology

Noise impacts associated with the proposed project were assessed in this section based primarily on the Acoustic Assessment for the AVEP Solar Project (Appendix M). Potential significant impacts associated with the project were evaluated on a quantitative and qualitative basis through a review of existing literature and available information, and by using professional judgment in comparing the anticipated proposed

project effects on noise with existing conditions. The evaluation of proposed project impacts is based on significance criteria established by Appendix G of the *CEQA Guidelines*, which the Lead Agency has determined to be appropriate criteria for this draft EIR.

Construction Noise

Predicted noise levels at nearby noise-sensitive land uses were calculated utilizing typical noise levels and usage rates associated with construction equipment, derived from the U.S. Department of Transportation, Federal Highway Administration's (FHWA) Roadway Construction Noise Model (version 1.1) and representative data obtained from similar construction projects. Construction noise levels were predicted assuming an average noise attenuation rate of 6 dB per doubling of distance from the source.

Long-Term Operational Stationary-Source Noise

Predicted noise levels associated with on-site stationary noise sources and activities were calculated based on representative data obtained from existing literature and noise assessments prepared for similar projects. Operational noise levels were predicted assuming an average noise-attenuation rate of 6 dB per doubling of distance from the source. Operational noise levels were calculated at the project site property lines and nearby land uses for comparison to the County noise standards.

Long-Term Operational Traffic Noise

Traffic noise levels were calculated using the FHWA Roadway Noise Prediction Model (FHWA-RD-77-108) based on California vehicle reference noise emission factors and traffic data obtained from the traffic analysis prepared for the proposed project. Additional input data included vehicle speeds, ground attenuation factors, and roadway widths. Predicted noise levels were calculated at a distance of 100 feet from the near-travel-lane centerline. Increases in traffic noise levels attributable to the proposed project were determined based on a comparison of predicted noise levels, with and without project implementation.

Construction Groundborne Vibration

Groundborne vibration levels associated with construction-related activities were evaluated utilizing typical groundborne vibration levels rates associated with construction equipment, obtained from the FTA's Transit Noise and Vibration Impact Assessment Manual (FTA, 2018). Groundborne vibration impacts related to structural damage and human annoyance were evaluated taking into account the distance from construction activities to nearby land uses and typically applied criteria for structural damage and human annoyance (refer to Table 4.13-4 and Table 4.13-5).

Operational Vibration Impacts

Since operation of the proposed project would involve minor operational traffic, including O&M staff and regular maintenance truck (0.076 in/sec PPV), and panel washing activity (not measurable), project-related vibration impacts would not have any measurable effect on the adjacent off-site sensitive receptors.

Thresholds of Significance

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

A project could have a significant noise-related adverse effect if it would result in:

a. Generation of a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies;

b. Generation of excessive groundborne vibration or groundborne noise levels;

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or

d. For a project located within the Kern County Airport Land Use Compatibility Plan, would the project expose people residing or working in the project area to excessive noise levels.

Substantial Temporary or Permanent Ambient Noise Increase in Excess of Standards

Kern County regulates noise levels per the requirements of Chapter 8.36 (Noise Control) of the Kern County Code of Ordinances, which establishes hours of construction and limitations on construction-related noise impacts on adjacent sensitive receptors. Specifically, construction activities that are audible to a person with average hearing ability at a distance of 150 feet from the construction site, or if the construction site is within 1,000 feet of an occupied residential dwelling, are prohibited between the hours of 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends. However, as previously stipulated, 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, and (2) Emergency work is exempt from this section. 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}. Additionally, the WSSP further identifies both daytime and nighttime noise standards for land uses in the WSSP area. For sensitive land uses, which include residential uses, the WSSP has established operational noise limitations of 55 dBA L_{50} during the daytime hours and 45 dBA L_{50} during the nighttime hours. The WSSP also identifies an average daily (24-hour) noise level limit of 65 dBA L_{dn}/CNEL for residential uses, which is consistent with the Kern County General Plan Noise Element. Therefore, in assessing the potential noise impacts resulting from the proposed project's use of stationary operational equipment, the nearby noise-sensitive land uses that are within the WSSP area are evaluated based on the daytime and nighttime noise level limitations established by the WSSP, while the nearby noise-sensitive land uses that are outside of the WSSP area are evaluated based on the County's average daily noise level limit of 65 dBA L_{dn}. As such, operational noise impacts from stationary equipment are assessed by

determining if the proposed project would result in a substantial increase in ambient noise levels that would exceed the applicable County and WSSP noise standards at the outdoor activity area of the nearest noise-sensitive land use.

Generation of Excessive Groundborne Vibration

For the purposes of assessing potential groundborne vibration impacts associated with the proposed project, Caltrans's vibration criteria for potential structural damage risks and human annoyance was used in this analysis. Accordingly, groundborne vibration levels would be considered significant if predicted short-term construction or long-term operational groundborne vibration levels attributable to the proposed project would exceed the recommended criteria for structural damage or human annoyance (i.e., 0.25 and 0.1 in/sec PPV, respectively) at the nearest off-site existing structure (refer to Table 4.13-4 and Table 4.13-5). These thresholds are considered to represent a conservative level at which construction-related activities would result in either structural damage or human annoyance. The proposed project would not result in the use of equipment or processes that would result in long-term or permanent increases in groundborne vibration.

Project Impacts

Impact 4.13-1: The project would result in generation of a substantial temporary or permanent increase in the ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.

The noise-sensitive receptors in proximity to the project site are residences located within 1,000 feet of any of the project site boundaries, as shown in bold in **Table 4.13-3**, *Noise-Sensitive Receptors*, and Figure 4.13-3. The 1,000-foot distance was chosen for the analysis because the Kern County Noise Ordinance limits hours of construction for projects located within 1,000 feet of an occupied residential dwelling. There are total of 10 residences located within the 1,000-foot distance of the project site boundary and additions to the existing Rosamond and Willow Springs substations. Residences are located approximately 170 feet to the east and west, and 900 feet to the southeast of the Rabbitbrush Subject Site boundary; and approximately 120, 165, 175, 500, and 850 feet to the east and 775 feet to the southeast of the Chaparral Subject Site boundary; and approximately 480 feet from the location within the Rosamond Substation where improvements (construction) will occur. There are no other sensitive noise receptors, such as schools, hospitals, rest homes, long-term care and mental care facilities, churches, libraries, and parks, found within the 1,000-foot distance of the boundaries of the project site.

Construction Activities

During project construction, the rural residences located nearest to the project site would be exposed to vehicle traffic noise associated with project-related construction traffic on local roadways. Traffic noise from daily trips by construction workers commuting to the site would contribute to the traffic noise levels along access routes. Construction-generated vehicle traffic would include a mix of light-duty automobiles and trucks and heavy-duty trucks. However, the project's construction vehicle traffic would not result in a substantial increase in average-daily vehicle traffic noise levels. Thus, noise impacts associated with increases in construction-generated vehicle traffic noise would be less than significant.

Project construction activities would include site preparation and clearing/grading, underground work (trenching), collection system installation, foundations, PV system installation, testing, and site cleanup/restoration work. Most of the construction activities associated with the proposed project would be intermittent and sporadic and occur in defined construction areas with noise emanating from various points rather than occurring over the entire Facility simultaneously. Typically, construction activities occur in small construction areas with noise emanating from the various points within. Noise levels would be attenuated by distance as construction activities move further away from receptors.

Project construction would generate noise during the operation of heavy-duty construction equipment, such as a crane, excavator, grader, roller, scraper, tractor/loader/backhoe, and trencher. Typical maximum (L_{max}) and average (L_{eq}) noise levels generated by individual pieces of construction equipment for each construction phase are summarized in **Table 4.13-6**, *Estimated Construction Equipment Noise Levels*.

TABLE 4.13-6: ESTIMATED CONSTRUCTION EQUIPMENT NOISE LEVELS

	Individual Equipment Noise Levels (dBA) at 50 Feet[a]	
Type of Equipment	**L_{max}**	**L_{eq}**
Mobilization		
Forklifts	83	79
Generator Sets	81	78
Graders, Scrapers	85	81
Off-Highway Trucks	77	73
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Rollers	85	78
Dozers	82	78
Tractor/Loader/Backhoe	80	76
Trenchers[b]	85	80
Generation Tie (Gen-tie) Line Construction		
Aerial Lift	75	68
Cranes		
Crawler Tractors	82	78
Forklifts	83	79
Generator Sets	81	78
Off-Highway Trucks	77	73
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Tractor/Loader/Backhoe	80	76
Substation Construction		
Aerial Lift	75	68
Crane	85	77
Forklifts	83	79

TABLE 4.13-6: ESTIMATED CONSTRUCTION EQUIPMENT NOISE LEVELS

	Individual Equipment Noise Levels (dBA) at 50 Feet[a]	
Type of Equipment	**L_{max}**	**L_{eq}**
Off-Highway Trucks	77	73
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Tractor/Loader/Backhoe	80	76
Trenchers[b]	85	80
Building Construction		
Crane	85	77
Forklifts	83	79
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Tractor/Loader/Backhoe	80	76
Grader	85	81
Off-Highway Truck	77	73
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Rollers	85	78
Dozer	82	78
Scraper	85	81
Tractor/Loader/Backhoe	80	76
Solar Array Battery, Unmanned Buildings, Substation, and Transmission Line Installation		
Forklifts	83	79
Pneumatic Tools	85	82
Compressors	78	74
Generator Set	81	78
Off-Highway Truck	77	73
Light-Duty Vehicles (Autos, Pickup Trucks, Carts/ATVs)	75	71
Rollers	85	78
Skid Steers[b]	78	73
Tractor/Loader/Backhoe	80	76
Trencher[b]	85	80
Track-Mounted Post Drivers[b]	88	82
Tractor/Loader/Backhoe	80	76
Warning Horn/Batch Drop	83	70

[a] Based on estimated major noise-generating construction equipment. Not all equipment may be represented.
[b] Based on file measurement data obtained from a similar project.

SOURCE: FHWA 2006.

As shown in **Table 4.13-6**, *Estimated Construction Equipment Noise Levels,* at a reference distance of 50 feet, project construction equipment would generate maximum and hourly average noise levels ranging from approximately 75 to 88 dBA L_{max} and 62 to 82 dBA L_{eq}, respectively. Therefore, the highest noise levels of the proposed construction equipment are estimated at approximately 88 dBA L_{max} at 50 feet and 82 dBA L_{eq} at 50 feet. Assuming a conservative scenario where all construction equipment per activity would be operating simultaneously and in the same location, construction noise levels for the noisiest activity of construction (system installation) could reach up to approximately 93 dBA L_{eq} at 50 feet from the source.

Chaparral Solar Facility

Construction activities associated with the Chaparral Solar Facility would include move-on (laydown, construction trailers, and parking area), site preparation and grading, underground work (trenching), substation construction, electrical line installation, system installation, and cleanup/testing/restoration. The nearest sensitive receptors (residential uses) would be located approximately 120 to 1,295 feet from the closest construction area (depending on which construction activity is occurring). The combined average (L_{eq}) noise levels generated from each construction activity and at the nearest receptor are summarized in **Table 4.13-7**, *Chaparral Solar Construction Noise Levels*.

TABLE 4.13-7: CHAPARRAL SOLAR CONSTRUCTION NOISE LEVELS

Construction Activity	Combined Noise Level (dBA L_{eq}) at 50 Feet[a]	Nearest Sensitive Receptor[b]	Distance to Nearest Receptor (feet)[c]	Combined L_{eq} at Nearest Sensitive Receptor[d]
Move-on (laydown, construction trailers, and parking area)	89	#19	1,295	62
Electrical Collection Line Installation	88	#1	585	65
Site Preparation and Grading	92	#3	120	85
Underground Work (trenching)	88	#3	120	80
System Installation	93	#3	120	85
Cleanup/Testing/Restoration	87	#3	120	79

NOTES:

[a] Assuming a conservative scenario where all construction equipment per activity would be operating simultaneously and in the same location.

[b] These receptors correspond with those shown in Table 4.13-3 and Figure 4.13-3.

[c] Distance measured from the closest Chaparral construction area to the central portion of the sensitive receptor's outdoor activity area (e.g., backyard, front yard, swimming pool area, etc.). These distances may differ compared to those shown in Table 4.13-3 based on the location of the specific construction activity occurring.

[d] Construction noise levels would diminish rapidly with distance from each construction site at a rate of approximately 6 dBA per each doubling of the distance, with additional attenuation from topography, ground conditions, and presence of man-made (e.g., buildings, walls) and/or natural barriers located in the line of sight between the noise source and the nearest sensitive receptor.

SOURCE: FHWA, 2006; MBI, 2020.

As shown in **Table 4.13-7**, *Chaparral Solar Construction Noise Levels,* combined construction noise levels from each activity at the closest sensitive receptors would range from 62 dBA L_{eq} to 85 dBA L_{eq} during

construction of the Chaparral Solar Facility, assuming all construction equipment of each activity would be operating simultaneously and performing work along the project boundary nearest the receptor. However, this is a conservative estimate as equipment and trucks would be moving across the site at various times and distances from nearest sensitive receptors, reducing the composite construction noise perceived off-site.

Rabbitbrush Solar Facility

Construction activities associated with the Rabbitbrush Solar Facility would include move-on (laydown, construction trailers, and parking area), electrical collection line installation, site preparation and grading, underground work (trenching), system installation, and cleanup/testing/restoration. The nearest sensitive receptors (residences, Receptors #17 and #19) would be located approximately 170 to 2,760 feet from the Rabbitbrush Solar Facility construction area (depending on which construction activity is occurring). The combined average (L_{eq}) noise levels generated at the source and nearest receptor for each construction phase are summarized in **Table 4.13-8**, *Rabbitbrush Solar Construction Noise Levels*.

TABLE 4.13-8: RABBITBRUSH SOLAR CONSTRUCTION NOISE LEVELS

Construction Activity	Combined Noise Level (dBA L_{eq}) at 50 Feet[a]	Nearest Sensitive Receptors[b]	Distance to Nearest Receptor (feet)[c]	Combined L_{eq} at Nearest Sensitive Receptor[d]
Move-on (laydown, construction trailers, and parking area)	89	#17	2,760	55
Site Preparation and Grading	92	#17, 19	170	82
Underground Work (trenching)	88	#17, 19	170	77
System Installation	93	#17, 19	170	82
Cleanup/Testing/Restoration	87	#17, 19	170	76

NOTES:

[a] Assuming a conservative scenario where all construction equipment per activity would be operating simultaneously and in the same location.

[b] These receptors correspond with those shown in Table 4.13-3 and Figure 4.13-3.

[c] Distance measured from the closest Rabbitbrush construction area to the central portion of the sensitive receptor's outdoor activity area (e.g., backyard, front yard, swimming pool area, etc.). These distances may differ compared to those shown in Table 4.13-3 based on the location of the specific construction activity occurring.

[d] Construction noise levels would diminish rapidly with distance from each construction site at a rate of approximately 6 dBA per each doubling of the distance, with additional attenuation from topography, ground conditions, and presence of man-made (e.g., buildings, walls) and/or natural barriers located in the line of sight between the noise source and the nearest sensitive receptor.

SOURCE: FHWA, 2006; MBI, 2020.

As shown in **Table 4.13-8**, *Rabbitbrush Solar Construction Noise Levels,* the combined construction noise levels from each activity at the nearest receptors would range from 55 dBA L_{eq} to 82 dBA L_{eq} during construction of the Rabbitbrush Solar Facility, assuming all construction equipment would be operating simultaneously and performing work along the project boundary nearest the receptor (MBI, 2020).

AVEP Project Impacts

Assuming the two Solar Facilities would be constructed simultaneously,[1] the combined effect of construction activities at the Chaparral and Rabbitbrush Facilities may expose sensitive receptors (residential uses) to further increased noise levels. However, most residential uses in the project area would only be exposed to construction noise from the nearest of the Solar Facilities (i.e., either Chaparral or Rabbitbrush) due to their location and distance to the other Facilities. The sensitive receptor potentially exposed to the highest construction noise level would be the residence (Receptor #19) located approximately 170 feet east of the Rabbitbrush Solar Facility, 1,250 feet west of the Chaparral Solar Facility, and 360 feet from collector line construction. Simultaneous construction of the Chaparral Solar Facility, the Rabbitbrush Solar Facility, and collector line construction could potentially generate a combined noise level up to 82.8 dBA[2,3] at the property line of this residence (MBI, 2020).

The Kern County General Plan and Noise Ordinance does not set a quantitative noise level limit or threshold for temporary construction activities; therefore, project construction-generated noise levels would not conflict with noise standards established in local land use plans. As such, construction of the Chaparral and Rabbitbrush Solar Facilities would not result in a substantial temporary increase in ambient noise levels in excess of local noise standards.

However, the Kern County Noise Control Ordinance limits construction hours of the day for noise-generating construction activities that are audible at 150 feet from the construction site, or that occur within 1,000 feet of an occupied residential dwelling. In such instances and with the exception of emergency work or County-approved work, construction activities would be prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and between 9:00 p.m. to 8:00 a.m. on weekends. However, as previously stipulated, 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, and (2) Emergency work is exempt from this section. These construction hour limitations would apply to the proposed project, and compliance with these hourly restrictions would substantially decrease levels of annoyance and potential sleep disruption to occupants of nearby residential dwellings. Construction within 1,000 feet of a residential dwelling would occur in compliance with the Kern County Noise Ordinance.

As shown in Tables 4.13-7 and 4.13-8, construction noise levels would result in a temporary increase ambient noise levels at nearby sensitive receptors compared to existing conditions, as previously shown in **Table 4.13-3**, *Noise-Sensitive Receptors*. However, implementation of noise reduction measures MM 4.13-1 through MM 4.13-3 would minimize noise effects generated by the project by limiting and/or reducing potential construction noise during construction, as well as providing notice to nearby residents of construction activities and a contact number for noise complaints. Because construction of the proposed project would comply with the hourly limitations identified in the County's noise-control ordinance, impacts would be less than significant.

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1 With overlapping construction activities, as shown in Tables 1 and 2 (e.g., the Move-On phase for the Chaparral and Rabbitbrush Solar Facilities may overlap).

2 Based on the logarithmic scale of combined noise levels from the simultaneous construction of the Chaparral Solar Facility (system installation), Rabbitbrush Facility (system installation), and gen-tie line construction; refer to the noise calculation data in Appendix M.

3 This noise level represents the worst-case noise scenario for the simultaneous construction of the Chaparral and Rabbitbrush Solar Facilities, as the residence located at Receptor #19 would be the closest receptor to simultaneous solar Facility construction activities.

Operational Noise

Once construction has been completed, noise generated by project operations would mostly occur from the on-site operation of transformers, inverters, shared substations, and power conversion stations. Once fully operational, the proposed project would operate for seven days a week on a regular basis. Additionally, because the proposed project would employ fixed-tilt or tracker technology, and may include either horizontal single-axis tracker (HSAT) systems or dual-axis tracker (DAT) systems in order to orient the solar panels toward the sun, the operation of the electrical motors used to power the HSATs and/or DATs would generate intermittent noise levels. As low background noise levels exist, corona discharge (defined as the electrical breakdown of the air into charged particles, often resulting in audible noise) could also be potentially detectable in the proposed vicinity of the transmission lines, more so during high humidity conditions. Furthermore, additional operational noise sources would also include on-site vehicle operations and intermittent maintenance activities.

Estimated operational noise levels at studied sensitive receptors have been determined based on their respective nearest distance to each of the project's applicable noise sources. Operational noise levels were evaluated to determine they would comply with applicable daytime and nighttime thresholds (45 dBA L_{eq}/L_{50} nighttime and 55 dBA L_{eq}/L_{50} daytime within the WSSP).

Chaparral Solar Facility

Operation and maintenance of the Chaparral Solar Facility would include permanent and temporary noise sources associated with the solar PV systems, electrical collection lines, O&M building(s), parking area, aboveground water storage tank, permanent water lines, septic system, and other associated facilities, such as the substation and Energy Storage Systems (ESS).

The solar PV arrays could include operation of single axis trackers. Noise from each tracker motor ranges from 62 dBA to 63 dBA at 1-meter distances, which is considered an appropriate reference noise level due to the low intensity of the motor. Each set of tracker motors would operate for a short period of time (normally two seconds each per tracker) and pauses for a longer period of time (about five minutes) before operating again, only during daylight hours. Due to the dispersed layout of tracker motors, their distance from sensitive receptors, and the intermittent noise generating activity, composite noise levels were not calculated. The nearest sensitive noise receptors to any tracker would be residences (Receptors #1, #2 and #3) located approximately 200 feet to the east of the closest Chaparral Solar Facility PV array. At this distance, tracker noise would approximately 27.3 dBA and would not exceed the County's 65 dBA L_{dn} noise level standard for residential uses.

The new electrical on-site and off-site collection lines connecting to the Chaparral Solar Facility would also generate audible corona noise. Audible noise transmission and distribution lines are a function of the line voltage, the conductor design, and weather conditions. Corona noise from 230 kV transmission lines has been reported at 40 dBA right below the line. Even though any electrical transmission or distribution line that would be installed on-site and off-site as part of the Chaparral Solar Facility would have the potential to emit electrical discharge (or corona discharge), audible noise from corona discharge is expected to be within the range of 40 dBA or below; therefore, it would be also below the daytime and nighttime noise standards of 55 dBA L_{50} and 45 dBA L_{50}, respectively, of the WSSP. These levels are expected to be insignificant compared to other higher voltage lines currently existing and under construction in the area.

Additional permanent noise sources from the Chaparral Solar Facility would include small-scale inverters, medium voltage transformers, and ESS. Small-scale inverters and medium voltage transformers would emit nominal noise levels that would attenuate over distance, resulting in inaudible noise at the nearest sensitive receptors (over 100 feet away). The primary noise source associated with ESS operations would be the use of HVAC units (the ESS does not generate noise itself). The Chaparral Solar Facility would utilize an ESS capable of storing up to 1,000 MWh, which would require approximately 155 HVAC units to operate simultaneously. Standard HVAC units for similar energy storage projects produce 68 dBA at a distance of 50 feet during full operation. The nearest sensitive receptor to the proposed ESS area at the Chaparral Solar Facility is located approximately 2,205 feet to the northwest[4] (Receptor #39). At this distance, noise levels from the ESS HVAC units would be approximately 35.1 dBA, which is below the daytime and nighttime noise standards of 55 dBA L_{50} and 45 dBA L_{50}, respectively, of the WSSP.

Chaparral Solar Facility operations would require up to 10 full-time equivalent (FTE) personnel (or personnel hours totaling 10 FTE positions) consisting of plant operators and maintenance technicians. The FTE staff would conduct routine visits for panel cleaning and repairs; panel washing could be done one or two times per year. Limited deliveries would be necessary for replacement PV modules and equipment during Chaparral Solar Facility operations. These activities are not expected to occur on a daily basis and would not generate a significant amount of traffic or create a substantial increase of vehicular noise in the area. Any increase in traffic would be minimal and sporadic; therefore, impacts from vehicular noise would be minimal.

The operation of solar trackers, new electrical collection lines, inverters, medium voltage transformers, and ESS would not generate permanent noise levels in excess of noise standards or create a substantial increase in ambient noise levels within the Chaparral Solar Facility. In addition, operational maintenance activities would generate minimal noise.

Rabbitbrush Solar Facility

Operation and maintenance of the Rabbitbrush Solar Facility would include permanent and temporary noise sources associated with the solar PV systems, electrical collection lines, O&M building (s), parking area, aboveground water storage tank, permanent water lines, septic system, and other associated facilities, such as the ESS.

The solar PV arrays could include operation of single axis trackers. Noise from each tracker motor ranges from 62 dBA to 63 dBA at 1-meter distances. This is considered an appropriate reference noise level due to the low intensity of the motor. Each set of tracker motors would operate for a short period of time (normally two seconds each per tracker) and pauses for a longer period of time (about five minutes) before operating again. This process only occurs during daylight hours. Due to the dispersed layout of tracker motors, their distance from sensitive receptors, and the intermittent noise generating activity, composite noise levels were not calculated. The nearest sensitive noise receptor to any tracker would be residences (Receptors #17 and #19) located approximately 170 feet to the east and west of the Rabbitbrush Solar Facility. The attenuated sound levels (from the trackers as a point source) at this distance would be approximately 28.7 dBA, which is below the County's 65 dBA L_{dn} outdoor noise level standard for residential uses.

[4] This is the approximate distance from the receptor to the proposed ESS area located to the northwest of the 110th Street West and Holiday Avenue intersection.

The new electrical on-site and off-site collection lines connecting to the Rabbitbrush Solar Facility would also generate audible corona noise. Audible noise transmission and distribution lines are a function of the line voltage, the conductor design, and weather conditions. Corona noise from 230 kV lines has been reported at 40 dBA right below the line. Even though any electrical distribution line that would be installed on-site and off-site as part of the Rabbitbrush Solar Facility would have the potential to emit electrical discharge (or corona discharge), audible noise from corona discharge is expected to be within the range of 40 dBA or below; therefore, it would be below the daytime and nighttime noise standards of 55 dBA L_{50} and 45 dBA L_{50}, respectively, of the WSSP. These levels are expected to be insignificant compared to other higher voltage lines currently existing and under construction in the area.

Additional permanent noise sources from the Rabbitbrush Solar Facility would include small-scale inverters, medium voltage transformers, and ESS. Small-scale inverters and medium voltage transformers would emit nominal noise levels that would attenuate over distance, resulting in inaudible noise at the nearest sensitive receptor (approximately 170 feet away). The primary noise source associated with ESS operations would be the use of HVAC units (the ESS does not generate noise itself). The Rabbitbrush Solar Facility would utilize an ESS capable of storing up to 1,000 MWh, which would require approximately 155 HVAC units to operate simultaneously. Standard HVAC units for similar energy storage projects produce 68 dBA at a distance of 50 feet during full operation. The nearest sensitive receptor to the proposed ESS area at the Rabbitbrush Solar Facility is located approximately 0.54 miles to the south along Rosamond Boulevard (Receptor #14). At this distance, noise levels from the ESS HVAC units would be 32.9 dBA, which is below the daytime and nighttime noise standards of 55 dBA L_{50} and 45 dBA L_{50}, respectively, of the WSSP.

Rabbitbrush Solar Facility operations would require up to 10 full-time equivalent (FTE) personnel (or personnel hours totaling 10 FTE positions) consisting of plant operators and maintenance technicians. The FTE staff would conduct routine visits for panel cleaning and repairs; panel washing could be done one or two times per year. Limited deliveries would be necessary for replacement PV modules and equipment during Rabbitbrush Solar Facility operation. These activities are not expected to occur on a daily basis and would not generate a significant amount of traffic or create a substantial increase of vehicular noise in the area. Any increase in traffic would be minimal and sporadic; therefore, impacts from vehicular noise would be minimal.

The operation of solar trackers, new electrical collection lines, inverters, medium voltage transformers, substation, and ESS would not generate permanent noise levels in excess of noise standards or create a substantial increase in ambient noise levels within the Rabbitbrush Solar Facility. In addition, operational maintenance activities would generate minimal noise.

AVEP Project Impact

As discussed above, the operation and maintenance activities associated with the two separate Solar Facilities (Chaparral and Rabbitbrush) would result in nominal noise impacts to surrounding sensitive receptors. The combined effect of the two facilities operating simultaneously would also result in minimal operational noise impacts. Similar to the project construction noise impact analysis above, the sensitive receptor potentially exposed to the highest operational noise levels during project operations would be the residence (Receptor #19) located approximately 1,250 feet from the Chaparral Solar Facility PV arrays, 170 feet from the Rabbitbrush Solar Facility PV arrays, 360 feet from the proposed gen-tie line alignment, and between 0.60 miles and 2.2 miles from the proposed ESS HVAC units. As discussed above, noise levels from tracker PV array motors range from 62 dBA to 63 dBA at 1-meter distances, corona noise from the gen-tie line would

be approximately 40 dBA right below the line, and the simultaneous operation of 155 HVAC units is approximately 68 dBA at a distance 50 feet. The combined noise level of these sources from each Solar Facility would be approximately 37 dBA[5] at the closest sensitive receptor (Receptor #19), which is below the daytime and nighttime noise standards of 55 dBA L_{50} and 45 dBA L_{50}, respectively, of the WSSP.

Other stationary operational noise from the project would include small-scale inverters and medium voltage transformers. These point sources would emit nominal noise levels that would attenuate over distance, resulting in operational noise below the WSSP daytime and nighttime noise standards of 55 dBA L_{50} and 45 dBA L_{50}, respectively, at the nearest sensitive receptors (over 100 feet away).

Project operations would require up to 20 FTE personnel (or personnel hours totaling 20 FTE positions) consisting of plant operators and maintenance technicians to manage and operate the two Solar Facilities. The FTE staff would conduct routine visits for panel cleaning and repairs; panel washing could be done one or two times per year. Limited deliveries would be necessary for replacement PV modules and equipment during project operation. These activities are not expected to occur on a daily basis and would not generate a significant amount of traffic or create a substantial increase of vehicular noise in the area. Any increase in traffic would be minimal and sporadic; therefore, impacts from vehicular noise would be minimal. As such, the project would not result in a substantial permanent increase in ambient noise levels noise levels in excess of local noise standards.

Project Decommissioning

At such time the Chaparral and Rabbitbrush Solar Facilities are decommissioned, equipment operation and site restoration activities would result in a temporary increase in ambient noise levels in the project area. Given the fact that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to the project construction activities. Similar to the construction noise analysis above, decommissioning of project would result in potentially increased noise levels compared to existing conditions. Therefore, it is recommended that noise reduction measures MM 4.13-1 through 4.13-3 be implemented during decommissioning activities to reduce temporary noise levels at off-site receptors.

Willow Springs Substation Improvements

New 230 kV HV transformer(s), breakers, buswork, site control centers (SCC) and other associated equipment may be installed or modified in the Willow Springs Solar Project Substation for the Chaparral Solar Facility. The closest sensitive receptor (Receptor #39) is located approximately 0.50 miles to the northwest of the Willow Springs Substation. At this distance, construction and operational noise levels associated with improvements to the Willow Springs Substation would be inaudible.

Rosamond Substation Improvements

New 230 kV HV transformer(s), breakers, buswork, site control centers SCC and other associated equipment may be installed or modified in the Rosamond Springs Solar Project Substation for the Rabbitbrush Solar Facility. The closest sensitive receptor is a residence (Receptor #36) located approximately 480 feet south of the Rosamond Substation. At this distance, it is estimated that construction

[5] Based on the logarithmic scale of combined noise levels from the simultaneous operation of the Chaparral Solar Facility PV array, Rabbitbrush Facility PV array, and gen-tie line; refer to the noise calculation data in Appendix M.

noise levels associated with the proposed Rosamond Substation improvements could reach up to 70 dBA L_{eq} at this receptor assuming all construction equipment would be operating simultaneously and performing work along the project boundary nearest the receptor.[6] As such, noise levels from Rosamond Substation Improvements could temporarily exceed existing ambient noise levels (see Table 4.13-3) at nearby sensitive receptors. Therefore, it is recommended that noise reduction measures MM 4.13-1 through MM 4.13-3 be implemented during Rosamond Substation construction activities to reduce short-term construction noise levels at off-site receptors through various noise reduction and control measures.

Mitigation Measures

To reduce and minimize construction noise levels, implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3 are recommended:

MM 4.13-1: The following measures are to be implemented to further reduce short-term noise levels associated with project construction and decommissioning:

a. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and between 9:00 p.m. to 8:00 a.m. on weekends. These hourly limitations shall not apply to activities where hourly limitations would result in increased safety risk to workers or the public, such as commissioning and maintenance activities that must occur after dark to ensure photovoltaic arrays are not energized, unanticipated emergencies requiring immediate attention, or security patrols.

b. Equipment staging and laydown areas shall be located at the furthest practical distance from nearby residential land uses. To the extent possible, staging and laydown areas should be located at least 500 feet of existing residential dwellings.

c. Construction equipment shall be fitted with noise-reduction features such as mufflers and engine shrouds that are no less effective than those originally installed by the manufacturer.

d. Haul trucks shall not be allowed to idle for periods greater than five minutes, except as needed to perform a specified function (e.g., concrete mixing).

e. On-site vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency).

f. Back-up beepers for all construction equipment and vehicles shall be broadband sound alarms or adjusted to the lowest noise levels possible, provided that the Occupational Safety and Health Administration and California Division of Occupational Safety and Health's safety requirements are not violated. On vehicles where back-up beepers are not available, alternative safety measures such as escorts and spotters shall be employed.

[6] This is a conservative estimate as equipment and trucks would be moving across the site at various times and distances from nearest sensitive receptors, reducing the composite construction noise perceived off-site.

MM 4.13-2: Prior to the issuance of grading permits, a "noise disturbance coordinator" shall be established. The project operator shall submit evidence of methods of implementation and shall continuously comply with the following during construction: The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable measures such that the complaint is resolved.

MM 4.13-3: Prior to the issuance of grading permits, the project operator shall submit evidence of the following: Construction contracts shall specify that notices shall be sent out to all residences within 1,000 feet of the construction areas at least 15 days prior to commencement of construction. The notices shall include the construction's schedule and a telephone number where complaints can be registered with the noise disturbance coordinator. A sign legible at a distance of 50 feet shall also be posted at the construction site throughout construction, which includes the same details as the notices.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.13-2: The project would generate excessive groundborne vibration or groundborne noise levels.

In addition to noise, groundborne vibration and groundborne noise would be generated by project construction and operational activities. The proposed project would not involve the long-term operational use of any equipment or processes that would result in potentially significant levels of ground vibration. Construction activities that may result in groundborne vibration and/or groundborne noise (such as use of heavy equipment) would be temporary and only during daylight hours. Short-term construction activities associated with the proposed project may cause an increase in groundborne vibration levels, which decrease rapidly with distance. FTA has published standard vibration velocities for construction equipment operations. Vibration levels typically associated with construction equipment are summarized in **Table 4.13-9**, *Representative Vibration Source Levels for Construction Equipment*.

TABLE 4.13-9: REPRESENTATIVE VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Approximate Peak Particle Velocity at 25 Feet (inches/second)	Approximate Peak Particle Velocity at 50 Feet (inches/second)	Approximate Peak Particle Velocity at 100 Feet (inches/second)
Large bulldozer	0.089	0.031	0.011
Loaded trucks	0.076	0.027	0.010
Small bulldozer	0.003	0.001	0.000
Auger/drill rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory hammer	0.035	0.012	0.004
Vibratory compactor/roller	0.003	0.001	0.0004
Pile Driver (impact)	0.644	0.228	0.081

NOTES:

Calculated using the following formula:

$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

where:

PPV_{equip} = the peak particle velocity in in/sec of the equipment adjusted for the distance

PPV_{ref} = the reference vibration level in in/sec from Table 12-2 of the FTA *Transit Noise and Vibration Impact Assessment Guidelines*

D = the distance from the equipment to the receiver

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018. Table 7-4.

As shown in **Table 4.13-9**, *Representative Vibration Source Levels for Construction Equipment,* groundborne vibration levels generated by project construction equipment would range from 0.003 to 0.644 in/sec PPV at 25 feet from the source of activity. Vibration levels from post driving would be conservatively approximated by the pile driver category. Post driving would only occur during construction of the PV modules on-site; construction of the gen-tie line would not require the use of post drivers. Post drivers used during construction would be crawler or truck mounted, which generally result in less impact (i.e., lower vibration levels). At 25 feet, these values are below the 0.2 in/sec PPV significance threshold for non-engineered timber and masonry buildings and the 0.4 in/sec PPV human annoyance criteria, except for pile driving, which is below these thresholds at 100 feet.

Solar Facilities

The nearest off-site structure to the Chaparral Solar Facility construction area is the residence (Receptor #3) located approximately 120 feet east along Rosamond Boulevard/100th Street West. At this distance, vibration velocities would range from approximately 0.00 to 0.061 in/sec PPV. The nearest off-site structures to the Rabbitbrush Solar Facility construction area are residences (Receptors #17 and #19) located approximately 170 feet to the east and west of the Rabbitbrush Solar Facility. At this distance, vibration velocities would range from approximately 0.00 to 0.044 in/sec PPV. Therefore, as each of these values are below the 0.2 in/sec PPV significance threshold for non-engineered timber and masonry buildings and the 0.4 in/sec PPV human annoyance criteria, no sources of groundborne vibration would be expected to affect receptors outside of the work areas, and there would not be any potential for excessive

exposure of persons to or generation of groundborne vibration levels. Therefore, groundborne vibration impacts resulting from project construction would be less than significant.

The operation of the Chaparral, and Rabbitbrush Solar Facilities would have O&M components that may generate vibration, such as HVAC systems from each ESS, maintenance vehicles, small-scale inverters, medium voltage transformers, and substation transformers. However, vibration from these operational sources would generally occur within 50 feet of the generating source due to the rapid attenuation of vibration over distance. The nearest sensitive receptors are located over 100 feet from the Facilities boundaries. Due to distance attenuation from these sources to the surrounding sensitive receptors, the combined vibration effect of the two Facilities operating at once would be minimal. Therefore, groundborne vibration impacts resulting from project operation would be less than significant.

Rosamond and Willow Springs Substation Improvements

The project would require off-site improvements at the Willow Springs and Rosamond Substations, including new 230 kV HV transformer(s), breakers, buswork, site control centers SCC and other associated equipment. Due to the off-site location and distance from these substations to the Solar Facilities, the combined effect from construction vibration levels at the Willow Springs and Rosamond Substations would not collectively contribute to a vibration impact. Rather, vibration at the proposed Willow Springs and Rosamond Substation improvements would be localized.

Decommissioning

At such time the Chaparral and Rabbitbrush Solar Facilities are decommissioned, equipment operation and site restoration activities would create temporary vibration in the immediate vicinity. Given the fact that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to the project's construction activities. Therefore, decommissioning of the project would result in unnoticeable vibration levels at off-site receptors.

Therefore, groundborne vibration impacts resulting from project construction and operation would be less than significant.

Mitigation Measures

No mitigation 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.

Once constructed, the proposed project would operate continuously, seven days per week. Noise generated by project operations would be predominantly associated with the on-site 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 on-site vehicle operations and intermittent maintenance activities.

As discussed in Impact 4.13-1, the operation and maintenance activities associated with the two separate Solar Facilities (Chaparral and Rabbitbrush) would result in nominal noise impacts to surrounding sensitive receptors. The combined effect of the two Facilities operating simultaneously would also result in minimal operational noise impacts. Similar to the AVEP Project construction noise impact analysis above, the most impacted sensitive receptor during project operations would be a residence (Receptor #19) located approximately 1,250 feet from the Chaparral Solar Facility PV arrays, 170 feet from the Rabbitbrush Solar Facility PV arrays, 360 feet from the proposed gen-tie line alignment, and between 0.50 miles and 2.2 miles from the proposed ESS HVAC units. As discussed above, noise levels from tracker PV array motors range from 62 dBA to 63 dBA at 1-meter distances, corona noise from the gen-tie line would be approximately 40 dBA right below the line, and the simultaneous operation of 155 ESS HVAC units is approximately 68 dBA at a distance of 50 feet. The combined noise level of these sources from each Solar Facility would be approximately 37 dBA[7] at the closest sensitive receptor (Receptor #19), which would be similar to daytime ambient noise levels shown in **Table 4.13-3**, *Noise-Sensitive Receptors*, which, when added to the existing ambient levels, would result in approximately a 0–3 dBA increase over the ambient without the project. Therefore, project operation would not cause the ambient noise level measured at the property line of affected uses to increase by 5 dBA or greater.

Other stationary operational noise from the project would include small-scale inverters and medium voltage transformers. These point sources would emit nominal noise levels that would attenuate over distance, resulting in operational noise below the Kern County noise standard of 65 dBA L_{dn} at the nearest sensitive receptors (over 100 feet away). Project operations would require up to 20 FTE personnel (or personnel hours totaling 20 FTE positions) consisting of plant operators and maintenance technicians to manage and operate the two Solar Facilities. The FTE staff would conduct routine visits for panel cleaning and repairs; panel washing could be done one or two times per year. Limited deliveries would be necessary for replacement PV modules and equipment during project operation. These activities are not expected to occur on a daily basis and would not generate a significant amount of traffic or create a substantial increase of vehicular noise in the area. Any increase in traffic would be minimal and sporadic; therefore, impacts from vehicular noise would be minimal.

Therefore, the project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, and impacts are less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

[7] Based on the logarithmic scale of combined noise levels from the simultaneous operation of the Chaparral Solar Facility PV array, Rabbitbrush Facility PV array, and gen-tie line; refer to the noise calculation data in Appendix M.

Impact 4.13-4: The project is not located within the Kern County Airport Land Use Compatibility Plan and would not expose people residing or working in the area to excessive noise levels.

The closest airport to the Chaparral and Rabbitbrush Solar Facilities is Lloyd's Landing, a private airport approximately 0.52 miles northeast of Chaparral Solar Facility and 3 miles to the northeast of the Rabbitbrush Solar Facility. Other than Lloyd's Landing, the nearest airports to the project sites are the privately owned Rosamond Skypark approximately 5.5 miles to the east, the Mojave Air and Space Port approximately 15 miles to the northeast, and the Mountain Valley Airport (a private airport which allows public access) approximately 15 miles to the north. The project is not located within the sphere of influence of any airport as identified by the Kern County Airport Land Use Compatibility Plan (County of Kern, 2012), and therefore, the project would not expose people residing or working in the area to excessive noise levels. Impacts are less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

As described in Section 3.9, *Cumulative Projects*, and listed in **Table 3-4**, *Cumulative Projects List,* there are a total of 145 projects in the vicinity to the project site, 66 of which are located within the 6-mile cumulative radius of the project site, as shown on Figures 3-19 and 3-20, which include other solar projects, such as, Antelope Valley, Aurora, RE Astoria, RE Rosamond One and Two, Rosamond Solar Array, Willow Springs Solar Array, Valentine, Apollo, Windhub, Gettysburg, EDF, Mojave and Tropico, and IP Solar. Due to the localized nature of noise impacts, cumulative impacts would be largely limited to areas within the general vicinity (i.e., within approximately 1,000 feet per Chapter 8.36 of Kern County Code of Ordinances (County of Kern, 2010)) of the project site.

The proposed project's construction activities, in combination with the construction of other reasonably foreseeable projects in the area could result in increased short-term construction noise levels in the project area (depending upon the specific timing of the construction of those other projects and proximity to the project site). Construction activities associated with other projects in proximity to the project site could occur at the same time as the proposed project. Of the cumulative projects located within the 6-mile radius of the project site, there are several projects located within 1 mile of the project site including a project within 1 mile of each of the facility sites. Implementation of mitigation measures MM 4.13-1 through MM 4.13-3 would reduce and minimize construction noise levels; noise levels would be less than significant level on a project level basis.

The Kern County Code of Ordinances (Chapter 8.36 – Noise Control) establishes 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, if the construction site is within 1,000 feet of an occupied residential dwelling, are

prohibited between the hours of 9:00 p.m. to 6:00 a.m. on weekdays, and 9:00 p.m. to 8:00 a.m. on weekends. Such noise producing construction activities occurring outside of these acceptable construction hours is considered to be a violation of the County's noise control ordinance. However, as previously stipulated, 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, and (2) Emergency work is exempt from this section. Implementation of mitigation measures MM 4.13-1 through MM 4.13-3 would reduce and minimize construction noise levels and ensure the project's consistency with the County's noise control ordinance; noise levels would be less than significant on a project level basis. As a result, construction of the proposed project would not result in a cumulatively considerable contribution to noise impacts at residences located within approximately 1,000 feet of the project site. At receptor locations further than 1,000 feet from the project site, project-generated construction noise would diminish to near ambient levels and would not result in a cumulatively considerable contribution to construction noise levels associated with other construction projects. Therefore, when considered with other past, present, and reasonably foreseeable future projects, the proposed project would not result in a cumulatively considerable contribution to construction noise impacts.

Cumulative construction may also result in the exposure of people to or the generation of excessive groundborne vibration. The same receptor as identified for construction noise would be the closest to be impacted by all projects with respect to construction related vibration as well. Due to these distances, and the rapid attenuation of groundborne vibration, the project and the nearest related project are not in close enough proximity to this sensitive receptor such that any sensitive receptor would be exposed to substantial groundborne vibration levels. Construction of the collection lines, and decommissioning activities would result in similar noise and vibration levels identified for the construction of the proposed project. Therefore, cumulative impact in terms of groundborne vibration would be less than significant.

With respect to operational noise, as discussed for cumulative construction noise, there are several projects located within 1 mile of the project site including a project within 1 mile of each of the facility sites. As discussed under Impact 4.13-1, the maximum operational noise level of 37 dBA at the nearest receptor (Receptor #19) would be much lower than the County's 65 dBA L_{dn} exterior noise standard for residential use. The nearest cumulative project is located further away from Receptor #19 than both facilities of the proposed project. Therefore, Receptor #19 would be exposed to lower operational noise levels (less than 37 dBA) from operational noise generated by cumulative projects. As such, cumulative impacts associated with combined operational noise from the proposed project and cumulative projects are anticipated to be negligible at the nearest receptor. During operation, the gen-tie would not generate noise beyond the existing baseline environment. Thus, cumulative operational noise impacts would be less than significant.

Cumulative operation could also result in the exposure of people to or the generation of excessive groundborne vibration. However, since operation of the proposed project and related projects would involve operational traffic, including O&M staff and regular maintenance truck (0.076 in/sec PPV), and panel washing activity (not measurable), project-related vibration impacts would not have any measurable effect on the adjacent off-site sensitive receivers. Therefore, cumulative vibrational impacts would be less than significant.

Overall, when considered with other past, present, and reasonably foreseeable future projects, the proposed project would not result in a cumulatively considerable contribution to noise impacts.

Mitigation Measures

Implement Mitigation Measures MM 4.13-1 through MM 4.13-3 to reduce and minimize cumulative construction noise and vibration levels.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3, cumulative impacts would be less than significant.

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Section 4.14
Public Services

4.14.1 Introduction

This section of the EIR describes the affected environment and regulatory setting pertaining to public services, which include fire and police protection. This section also addresses the potential impacts on public services that would result from implementation of the project and the mitigation measures to reduce these potential impacts. Information for this section was taken from numerous sources, including websites, and service agency plans.

4.14.2 Environmental Setting

Fire Protection

The Kern County Fire Department (KCFD) provides primary fire protection services, fire prevention, emergency medical, and rescue services to more than 800,000 people in unincorporated areas of Kern County and nine incorporated cities (i.e., the cities of Arvin, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco). KCFD operates 47 full-time fire stations within 7 battalions and is equipped with 55 fire engines, 4 ladder trucks, 41 patrol vehicles, 25 command vehicles, 21 reserve engines and patrols, 6 dozers, 2 helicopters, 2 hazardous material response teams, and other ancillary vehicles and equipment. KCFD is staffed with 625 permanent employees, which includes 546 uniformed firefighters (KCFD, 2020). KCFD has experienced several budget and staffing cuts in recent years but was approved for a new budget by the Kern Board of Supervisors on August 25, 2020, granting the fire department funds to continue protecting the community (23ABC News, 2020a). Additionally, KCFD was awarded 2.9 million dollars by the Federal Emergency Management Agency (FEMA) from the Assistance to Firefighters Grant for critically needed equipment (23ABC News, 2020b).

The project consists of two discontinuous sites, the Chaparral Solar Facility site and the Rabbitbrush Solar Facility site (with both sites being comprised of two discontinuous portions), each of which would contain solar arrays and energy storage facilities, which together comprise the project site. The project site is located within Battalion 1, Central Mountains/Desert, which serves the southeastern portion of Kern County and is divided by State Route (SR) 58 that runs east/west and by SR-14 that runs north/south. Battalion 1 consists of eight stations (KCFD, 2018) and covers 951,600 acres of which 351,276 acres is State Responsibility Area (SRA) land area, which the California Department of Forestry and Fire Protection (CAL FIRE) has a legal responsibility to provide fire protection for this SRA land area. The SRA land area is bounded by the Mojave Desert on the east, the Tehachapi Mountains in the center, and the Central Valley to the west (KCFD, 2009). According to the CAL FIRE, California Fire Hazard Severity Zones Viewer, the project site and surrounding area is not within a SRA and the project site is within an unincorporated Local Responsibility Area (LRA) Unzoned and within a LRA Moderate fire hazard severity zone (CAL FIRE, 2020a) (See Figure 4.18-1, *Fire Hazard Severity Zones for Local Responsibility Areas* and Figure 4.18-2, *Fire Hazard Severity Zones for State Responsibility Areas*, located in Section 4.18, *Wildfire*, of this EIR).

Fire Station No. 15 (Rosamond), located at 3219 35th Street West, is approximately 7 miles to the east of the project site and would be the primary responder to a fire or emergency at the project site. In the event of a major fire or when short-staffed, other stations would be called on to respond, as necessary, including Fire Station No. 14 (Mojave), located at 1953 State Highway 58, Fire Station No. 12 (Tehachapi), located at 800 South Curry Street, and Fire Station No. 13 (Tehachapi), located at 21415 Reeves Street. Information on the three closest fire stations to the project site is included in **Table 4.14-1**, *List of Nearby Fire Stations*. The table identifies each type of facility, the name and address of the facility, and the approximate distance from the project site. In remote County areas like the project site, the average response time is approximately 21 minutes (CPSM, 2017).

TABLE 4.14-1: LIST OF NEARBY FIRE STATIONS

Agency	Facility	Address	Approximate Distance from Project Site
KCFD	Station No. 15	3219 35th West Street Rosamond, CA 93560	7 miles east of the Chaparral project site
KCFD	Station No. 14	1953 State Highway 58 Mojave, CA 93501	14 miles northeast of project site
KCFD	Station No. 12	800 South Curry Street Tehachapi, CA 93561	17 miles northwest of project site
KCFD	Station No. 13	21415 Reeves Street Tehachapi, CA 93561	18 miles northwest of project site

Kern County has 14 mutual-aid agreements with neighboring fire suppression organizations to further strengthen the emergency services (KCFD, 2018). The KFCS has a mutual aid agreement with the Los Angeles County Fire Department (LACFD) in the event that KCFD is unable to be the primary responder to an emergency. The LACFD has 174 fire stations throughout Los Angeles County. The LACFD is divided into 22 battalions with over 4,000 personnel (LACFD, 2017; LACFD, 2019). The nearest LACFD fire station to the project site is Station No. 130, located at 44558 Newgrove Street in Lancaster, approximately 13 miles southeast of the project site. The project site is not within an area of high or very high fire hazard, as determined by the County (KCFD, 2009) and CAL FIRE (CAL FIRE, 2020a).

Kern County applies and utilizes the National Fire Code set forth by the National Fire Protection Association, the California Fire Code, the California Building Code, and the Kern County Ordinance Code to regulate fire safety.

The Kern County Emergency Medical Services Division (EMS) is the lead agency for the emergency medical services system in Kern County and is responsible for coordinating all system participants in the County, which include the public, fire departments, ambulance companies, other emergency service providers, hospitals, and Emergency Medical Technician (EMT) training programs throughout the County. The EMS includes a system of services organized to provide rapid response to serious medical emergencies, including immediate medical care and patient transport to a hospital setting. EMS covers day to day emergencies, disaster medical response planning and preparation, and preventative health care. The department also provides certification and re-certification for EMT's, paramedics, specialized nurses (MICN), and specialized dispatchers (EMD) (Kern County Public Health Services Department, 2018). The nearest hospitals are the Antelope Valley Hospital, located at 1600 W. Avenue J in the City of Lancaster approximately 15 miles southeast of the project site, and the Adventist Health Tehachapi Hospital, located

at 1100 Magellan Drive in the City of Tehachapi approximately 18 miles northwest of the project site. The East Kern Health Care District has four facilities located in California City, approximately 26 miles northeast of the project site.

The Kern County Fiscal Year 2020-21 Recommended Budget (Kern County, 2020b) shows on-going deficiencies in funding for staffing and a $60 million backlog for capital equipment costs for the Fire Department. While the adopted Budget provides a transfer from the General Fund reserves, the County Administrative Office (CAO) report confirms this is not sustainable.

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, 2020a). 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, 2020b). The nearest substation that would provide service to the project site is the Rosamond Substation located approximately 9 miles southeast of the project site, at 1379 Sierra Highway in the unincorporated community of Rosamond. This substation provides services to approximately 20,000 residents in the southeastern most end of Kern County (KCSO, 2020c). Other substations in proximity to the project site include the Mojave Substation, Tehachapi Substation and Boron Substation. Information on the four closest substations to the project site is included in **Table 4.14-2**, *List of Nearby Sheriff Substations*.

TABLE 4.14-2: LIST OF NEARBY SHERIFF SUBSTATIONS

Agency	Facility	Address	Approximate Distance from Project Site
KCSO	Rosamond Substation	1379 Sierra Highway Rosamond, CA 93560	9 miles southeast of the project site
KCSO	Mojave Substation	1771 State Highway 58 Mojave, CA 93501	14 miles northeast of the project site
KCSO	Tehachapi Substation	22209 Old Town Road Tehachapi, CA 93581	19 miles northwest of the project site
KCSO	Boron Substation	26949 Cote Street Boron, CA 93516	38 miles northeast of the project site

The KCSO strives to respond to calls as quickly as possible. Life-threatening calls that involve a danger to someone's personal safety are given first priority. Response time is defined as the time required to respond to a call for service, measured from the time a call is received until the time a patrol car arrives at the scene. Response times naturally vary depending on the severity of the call, available staff, and location of patrol car. Average response time for the KCSO is five minutes or less for an emergency or immediate-response incident (e.g., a crime that is in progress and/or a life-or-death situation) and 8 to 10 minutes for routine calls (e.g., a crime that has already occurred and/or an incident that is not life-threatening). In 2018, the KCSO reported that the County's fiscal emergencies have impacted and affected staffing and have created a number of shortages in the East Kern area, including Mojave. This could mean potential delays in response times due to a limited budget, and consequently, less staff. (Barnwell, 2018).

Response time to an emergency at or near the project site would vary depending on the level of demand at the substation at the time of the call. If demand is high, the response time would be longer than the average times given above. The response time for a nonemergency call could be eight minutes or more, depending on staffing and the number of other calls for service. In some areas, response may not occur at all for nonemergency calls due to funding deficiencies.

The Kern County Fiscal Year 2020-21 Recommended Budget (Kern County, 2020b) shows on-going deficiencies in funding for staffing, training and equipment. While the adopted Budget provides a transfer from the General Fund reserves to prioritize law enforcement, the CAO report confirms this is not sustainable.

Off-Highway Vehicle (OHV) Enforcement Team

In 2000, the KCSO created the Off-Highway Vehicle (OHV) Enforcement Team that can be deployed to off road riding areas and adjacent communities in Kern County, as needed. The goal of the OHV Enforcement Team is to provide a safe and secure environment for the OHV community and nearby residents, and to help protect sensitive natural resources. Kern County attracts over 800,000 visitors a year to the local OHV riding areas and approximately 500,000 visitors in east Kern area. The OHV Enforcement Team patrols numerous off road riding areas in Kern County, including a popular riding area near a portion of the Pacific Crest Trail that runs through Rosamond, Mojave, and Tehachapi. The OHV Enforcement Team works closely with officers from the Bureau of Land Management (BLM), California State Parks, and other local law enforcement agencies (KCSO, 2020d).

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, 2020a). 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, 2020b). The nearest Inland Division office to the project site is located at 1313 Highway 58, in the unincorporated community of Mojave, approximately 14.4 miles northeast of the project site (CHP, 2020c).

Schools/Parks/Other Public Facilities

The project site is located within the Southern Kern Unified School District (SKUSD), which consists of Rosamond High School Early College Campus, Rosamond Elementary, Tropico Middle School, Westpark Elementary, Rare Earth High Continuation and Abraham Lincoln Alternative (SKUSD, 2020a, 2020b). Other school districts located in the vicinity include Arvin Union Elementary School District, El Tejon Unified, Maricopa Unified, General Shafter Elementary School District Lakeside Union Elementary School District, and Greenfield Union Elementary School, which include 27 other school facilities (Kern County Superintendent of Schools, 2019). The closest school to the project site is the Tropico Middle School, located approximately 4.5 miles east of the eastern boundary of the project site (eastern side of Chaparral).

The Kern County Parks and Recreation Department manages an extensive system of large regional parks designed to serve the entire countywide population, and small neighborhood and community parks intended primarily to meet the recreational needs of nearby residents in unincorporated communities. Kern County Parks & Recreation manages 8 regional parks, 40 neighborhood parks, and 25 public buildings, supervises three golf courses and landscapes 76 county buildings (Kern County, 2020).

Other public facilities include library facilities, post office facilities, and courthouses. The Kern County Library has 24 branches and 2 mobile libraries, which serve 850,000 residents within the County, including incorporated municipalities (Kern County Library, 2020). Additionally, there are currently 37 post offices that serve the County (United States Postal Service [USPS], 2020). Furthermore, there are currently 12 facilities serving the Superior Court of California in Kern County (Superior Court of California, 2020).

The Kern County Fiscal Year 2020-21 Recommended Budget (Kern County, 2020b) shows on-going deficiencies in funding libraries and parks with closings and lack of maintenance for facilities.

4.14.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Fire Code

The 2019 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 (CALFIRE)

Under Title 14 of the California Code of Regulations (CCR), CALFIRE has the primary responsibility for implementing wildfire planning and protection for State Responsibility Areas (SRAs). CALFIRE develops regulations and issues fire-safe clearances for land within a fire district of the SRA. More than 31 million acres of California's privately-owned wildlands are under CALFIRE's jurisdiction.

CAL FIRE adopted Fire Hazard Severity Zone maps for SRAs and LRAs in 2007. Fire Hazard is a way to measure the physical fire behavior so that people can predict the damage a fire is likely to cause. Fire hazard measurement includes the speed at which a wildfire moves, the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front. The project site is not located within a SRA but it is located in an area of moderate fire hazard and within an unincorporated LRA (CAL FIRE, 2020a).

In addition to wildland fires, CALFIRE's planning efforts involve responding to other types of emergencies that may occur on a daily basis, including residential or commercial structure fires, automobile accidents, heart attacks, drowning victims, lost hikers, hazardous material spills on highways, train wrecks, floods, and earthquakes. Through contracts with local government, CALFIRE provides emergency services in 36 of California's 58 counties (CALFIRE, 2020b).

Local

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

Kern County General Plan

Chapter 1. Land Use, Conservation and Open Space Element

1.4. Public Facilities and Services

Policies

Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

Policy 4: The provision of parks and recreational facilities of varying size, function, and location to serve County residents will be encouraged. Special attention will be directed to providing linear parks along creeks, rivers, and streambeds in urban areas.

Policy 5: Seek to provide recreational facilities where deficiencies have been identified

Policy 6: The County will ensure adequate fire protection to all Kern County residents.

Policy 7: The County will ensure adequate police protection to all Kern County residents.

Implementation Measures

Measure J: Ensure that the Superintendent of Schools and the respective school districts are informed of development proposals and are afforded the opportunity of evaluating their potential effect on the physical capacity of school facilities.

Measure B: Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.

Measure L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

1.10. General Provisions

Goal

Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving viable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

1.10.1. Public Services and Facilities

Policies

Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure that it generates and upon which it is dependent.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to ensure the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Chapter 4. Safety Element

4.6. Wildland and Urban Fire

Policies

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 6: All discretionary projects shall comply with the adopted fire code and the requirements of the fire department.

Implementation Measure

Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Willow Springs Specific Plan

The entire project site is located within and subject to the provisions of the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in April 2008 and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Area. The public services-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project are outlined below (Kern County, 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included below.

Public Facilities

Goals

Goal 4: To recognize early on the need for the Southern Kern Unified School District to advise the County of the need to establish and/or expand educational facilities in the area.

Goal 5: The establishment of parks and recreational facilities of varying size, function, and location to serve Willow Springs residents.

Policies

Policy 2: In evaluating a development application, Kern County will consider both its physical and fiscal impact on the local school district and other public facilities. If it is found that the district or facilities involved will, as a result, require additional facilities or incur costs

requiring additional local revenues, the development project will be required as a condition of approval to contribute funds to the district for the costs directly attributable to the project.

Policy 5: New development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

Mitigation/Implementation Measures

Measure 10: New development shall contribute its pro rata share for circulation improvements, school impact fees, park land dedications/fees, and possible biota impact fees. As additional impact fees are adopted, they shall be incorporated into the Specific Plan text.

Measure 11: The school district, along with the developer, shall provide Kern County with an alternative funding method, should an alternative be submitted with an impending development.

Measure 12: The school district, along with the developer, shall provide Kern County with an alternative funding method, should an alternative be submitted with an impending development.

Measure 25: The applicants are subject to school assessment fees pursuant to AB 2926.

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 LRA Moderate and LRA Unzoned (CAL FIRE, 2020a).

Kern County Fire Department Hazards Mitigation Plan

The purpose of the KCFD Hazards Mitigation Plan is to reduce or eliminate long-term risk to people and property from natural hazards and their effects in Kern County. The plan includes specific recommendations for actions that can mitigate future disaster losses, as well as a review of the County's current capabilities to reduce hazards impacts. This multi-jurisdictional plan includes Kern County, and the incorporated municipalities Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The plan also covers 53 special districts that include school, recreation and park, water, community service and other districts. The plan has been formally adopted by each participating entity and is required to be updated a minimum of every five years (KCFD, 2012).

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2019 California Fire Code and the 2018 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of

buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees therefore (Kern County, 2019b).

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, 2019b).

California State Legislature Active Solar Energy Exclusion

The State of California has provided reduced property taxes for the solar industry. No other industry has this type of property tax reduction outside a local government providing a specific incentive of a development project.

The California Franchise Tax Board's website outlines that the property tax incentive for the installation of an active solar energy system is in the form of a new construction exclusion (California State Board of Equalization, 2020). It is not an exemption. The installation of a qualifying solar energy system will not result in either an increase or a decrease in the assessment of the existing property. The site states: *"Generally, when something of value is physically added to real property, the addition is assessed at current market value and this value is added to the existing base year value of the real property. When an*

active solar energy system is installed, it is not assessed, meaning that the existing assessment will not increase."

The value of the underlying land and some improvements such as operations and maintenance buildings and battery storage are assessed, but the solar panels and majority of equipment are not. Effective June 20, 2014, the sunset date for the active solar energy system new construction exclusion was extended through the 2023-24 fiscal year. The statue is now scheduled to sunset on January 1, 2025. The Kern County Assessor has calculated that the estimated lost annual revenue to the County General Fund from the existing large scale commercial scale solar projects already built is $19,924,000 that they would normally pay (Kern County, 2020c). They currently pay $1,511,000.

This revenue is only the funding that would normally go to the General Fund to pay for public services and facilities that maintain quality of life for communities and residents in unincorporated Kern County. The Kern County 2020-2021 Recommended Budget details the General Fund, which funds many County operations, as totaling $883.1 million, a decrease of $76.5 million, or 7.97% from the 2019-2020 budget. The 2019-2020 budget was the end of a four-year fiscal emergency with a deficient of over $40 million.

4.14.4 Impacts and Mitigation Measures

Methodology

The methodology used to evaluate potential public services impacts includes the following: (1) evaluation of existing fire and police services and personnel for the fire and law enforcement stations serving the project site; (2) determination of whether the existing fire and law enforcement services and personnel are capable of servicing the proposed project, in addition to the existing population and building stock; and (3) determining whether the proposed project's contribution to the future service population would cause fire or police station(s) to operate beyond service capacity. The determination of the significance of the proposed project on fire protection and emergency medical and police protection services considers the level of services required by the proposed project and the ability of KCFD and KCSO to provide this level of service and maintain the regular level of service provided throughout the County, which in turn could require the construction of new or expansion of existing facilities. The methodology for this analysis included a review of published information pertaining to KCFD and KCSO. The contribution of the project through established property tax revenues was reviewed to fully document the projects contribution to all government services and facilities that provide for stability in communities and prevent decline of the communities' physical neighborhoods.

Thresholds of Significance

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

A project could have a significant adverse effect on public services if it would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain

acceptable service ratios, response times, or to other performance objectives for any of the public services:

i. Fire Protection

ii. Law Enforcement Protection

iii. Schools

iv. Parks

v. Other Public Facilities

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 services.

Fire Protection

Construction

The project would include up to two operation and maintenance (O&M) areas (one for each facility) that would be located within the project site boundaries. Such O&M area(s) would include a 1,000 sf O&M building and storage yard consisting of cargo containers for the storage of spare parts that would be constructed as a base for the ongoing operations and maintenance of the AVEP Solar Project.

The average and peak number of construction workers to be onsite would be approximately 688 and 946, respectively. The presence of construction workers at the project site would be temporary, anticipated to last a maximum of 24 months. The project would include the development of two photovoltaic (PV) solar facilities and associated infrastructure necessary to generate a combined total of approximately250 megawatts (MW) of renewable electrical energy including associated energy storage systems, two O&M buildings (one at each facility), communication towers, and collection lines, on approximately 1,406 acres of privately-owned land in unincorporated portions of Kern County, California. As determined by the County, the project site is not within an area of high or very high fire hazard (CAL FIRE, 2020a).

Fire protection requirements are based on the number of residents and workers in the KCFD primary service areas. Service demand is primarily tied to population, not building size, because emergency medical calls typically make up the majority of responses provided by the fire department. As the number of residents and workers increases, so does the number of emergency medical calls. There are no residential uses proposed as a part of the project. Therefore, no residents would occupy the project site and an increase in service demands as a result of an increase in residential uses would not occur.

Service demands as a result of personnel onsite would occur during construction of the proposed project. Typically, service demands per employee are less than service demands per resident. Nevertheless, the addition of construction personnel on the project site would result in an increase in demand for fire

protection services. While this would be an increase above existing levels, the presence of construction workers on the site would be temporary, as the construction period for the proposed project is anticipated to last a maximum of 24 months.

While construction of the proposed project would increase the number of people on the project site, and the increase would be temporary, fire hazards from the project as a large scale construction project would increase the need for response from fire for emergency services as well as fire protection. In addition, the project site is not within an area of high or very high fire hazard as determined by the County (Kern County, 2009) or CAL FIRE (CAL FIRE, 2020a), and the project would be required to prepare and implement a fire safety plan, as stated in Mitigation Measure MM 4.14-1. The aforementioned fire safety plan would be required to contain notification procedures and emergency fire precautions consistent with the 2019 California Fire Code and Kern County Fire Code. The aforementioned fire safety plan would be for use during the anticipated 12- to 24-month construction period, as well as during operations and decommissioning, and would include emergency fire precautions for vehicles and equipment as well as implementation of fire rules and trainings so temporary employees are equipped to support handling 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 project would have up to 10 employees on each Solar Facility site during the operational phase of the project. Employees would monitor the site and conduct maintenance activities. Although unlikely, maintenance activities could introduce fire risks to the project site. 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 2019 California Fire Code and Kern County Fire Code such that fire hazards are reduced and/or avoided.

The project includes two energy storage facilities that would have a fire rating in conformance with County and California Building Code standards. The energy storage facilities will include specialized fire suppression systems installed for the battery rooms to minimize fire risk. In accordance with Mitigation Measure MM 4.14-1, a fire safety plan will be prepared to ensure the energy storage facilities are constructed and operated in accordance with County and California Building Code standards that will minimize potential impacts to public services and associated fire hazards.

The project operator would be required to pay a Kern County cumulative impact fee (CIC), through implementation of Mitigation Measure MM 4.14-2 to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities thereby supporting a prosperous economy and assuring the provision of adequate public services and facilities. In addition, if the project is sold to a city, county, or utility company with assessed taxes that total less than $3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of $3,000 per megawatt. The amount shall be paid for all years of operation, through implementation of Mitigation Measure MM 4.14-3. Through implementation of Mitigation Measure MM 4.14-4, 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. With implementation of Mitigation Measures MM 4.14-1 through MM 4.14-4, any potential

operational impacts on fire protection services would be reduced. The project would not result in the need for new or physically altered KCFD facilities and impacts would be less than significant.

Law Enforcement Protection

Construction

As described above in Section 4.14.2, *Environmental Setting*, the KCSO provides primary law enforcement protection services for the project site and surrounding areas. The Rosamond Substation, located approximately 9 miles southeast of the project site, would provide primary law enforcement services to the project site. Similar to fire protection services, the need for police protection services would increase during construction of the proposed project as well as after construction.

The project site is located in a relatively remote location surrounded by undeveloped land, solar facilities, two sparse rural residential developments and residential accessory structures 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 12 to 24-month construction period. The added traffic associated with workers commuting to the project site, haul routes, deliveries, and other project-related traffic would be temporary and, therefore, would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways.

Additionally, fences would be installed around the perimeter of each site, substation, and other areas requiring controlled access, for safety and security purposes. All fencing shall comply with all applicable requirements of the Kern County Public Works Department/Building Inspection Division. The fencing would remain for the life of the project.

While construction of the project would increase the number of people on the project site, the increase would be temporary and, thus, would not necessarily substantially increase the service demand for law enforcement protection services in Kern County. However due to existing budget constraints, substations may close or be modified to address fiscal limitations.

Operation

Project operation could attract vandals or present other security risks. As described above, the project site is located in a relatively remote location in a rural community and is thus unlikely to attract attention that would make project facilities susceptible to crime. The security fencing around the perimeter of each site and other areas requiring controlled access and controlled access gates would minimize the need for surveillance and response by KCSO 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 each of the proposed O&M Building(s) during normal business hours. Therefore, new or physically altered KCSO facilities would not be required to accommodate the proposed project. The additional volume of vehicles associated with workers commuting to the project site during routine maintenance would be minor and is not expected to adversely affect traffic (see Section 4.15, *Transportation and Traffic*, for more details). Therefore, impacts to the CHP patrol are not anticipated. The project would implement Mitigation Measure MM 4.14-2 to provide a CIC to provide funding for the county budget for services that are not funded due to the State of California Active Solar Energy Exclusion provision on property taxes that the county would otherwise receive for services and facilities and assuring

the provision of adequate public services and facilities. In addition, if the project is sold to a city, county, or utility company with assessed taxes that total less than $3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of $3,000 per megawatt. The amount shall be paid for all years of operation, through implementation of Mitigation Measure MM 4.14-3. Through implementation of Mitigation Measure MM 4.14-4, 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. Impacts would be less than significant.

Schools/Parks/Other Public Facilities

Construction

As stated above, the proposed project would have up to 10 permanent onsite staff at each solar facility for a total of 20 permanent staff. The proposed project would require an average of 688 daily workers and a peak workforce of 946 workers during the anticipated 12 to 24-month construction period. The presence of construction workers at the project site would be temporary, through the duration of the approximate 12 to 24-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 project. If temporary housing should be necessary, it is expected that accommodations would be available in the nearby hotels in Lancaster, Palmdale, or other local communities. Therefore, the short-term increased employment of construction workers on the project site would not result in a notable increase in the residential population of the area surrounding the project site. Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, through the implementation of Mitigation Measure MM 4.14-5 which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities. Therefore, project construction workers would not increase demand for local schools, parks, or public facilities such that substantial physical deterioration of such facilities would occur, nor would project construction require the construction or expansion of recreational facilities which might have an adverse effect on the environment, nor result in substantial adverse physical impacts associated with the construction of new or physically altered facilities in order to maintain acceptable service ratios. Impacts during construction would be less than significant.

Operation

Operation of the project would not require full-time workers onsite. Employees would intermittently visit the project site for routine inspection, maintenance, and repair of solar arrays and accessory components. One to two employees would be onsite intermittently every month (less than four trips a week) to perform maintenance duties. These employees would likely come from an existing local and/or regional labor force and would not likely relocate their households as a consequence of working on the project. Even if the maintenance employees were hired from out of the area and had to relocate to southern Kern County, the resulting addition of potential families to this area would not result in a substantial increase in the number of users at local schools as accommodations for temporary housing would be available in the nearby hotels in Rosamond, Mojave, Lancaster, or other local communities. Therefore, staff required during operation would not increase demand for local schools, parks, or public facilities such that substantial physical deterioration of such facilities would occur, nor would project construction require the construction or

expansion of recreational facilities which might have an adverse effect on the environment, nor result in substantial adverse physical impacts associated with the construction of new or physically altered facilities in order to maintain acceptable service ratios. Impacts during construction would be less than significant.

Unlike other businesses in California, large scale solar has an exclusion from property taxes on their equipment. This property tax exclusion results in the project not providing the revenue needed to provide services and facilities for both the project and the communities that prevent decline of the physical neighborhoods in unincorporated Kern County. This is a direct impact from the project structure and the land if built with another type of land use would produce property tax revenue to provide necessary services and facilities and prevent physical decline of homes and businesses due to vacancy and inability for response for all services, including code enforcement to law enforcement, fire, roads and health and safety issues such as elderly care and child protection services. The cumulative impacts of this active solar tax exclusion over the life of the over 36,000 acres of projects has resulted in a loss to the General Fund over the last 10 years of over $103 million and deepened the on-going fiscal emergency of the county. Public policies in the Kern County General Plan and Willow Springs Specific Plan require development to address economic deficiencies in public services and facilities costs. Further the cumulative impacts of all the projects in addition to this project on various resources including aesthetics, air and biological resources have contributed to changing the visual and community character of the unincorporated communities and caused decline due to using land for a use that does not provide normal property tax revenue.

Mitigation Measure MM 4.14-2 provides a CIC calculated on net acreage that excludes assessable structures and permanent improvements (Operation and Maintenance Building and Energy Storage) and legally unbuildable land (recorded easements). The charge factor was calculated based on the fair share under the Government Code that the project would have paid if the Tax Exclusion was not present. The amount the project should pay is calculated as $550 per net acre annual charge. This is in addition to the normal property tax revenue legally assessed on the property as the fair share that is provided to the Kern County General fund. As this project application had already been deemed complete and commenced processing when the Dec 8, 2020 report on the amount of the deficiency in the revenue from the State of California Active Solar Energy Exclusion was presented to the Kern County Board of Supervisors, an accommodation is included in the mitigation that requires a one-time charge for the General fund contribution. In addition, if the project is sold to a city, county, or utility company with assessed taxes that total less than $3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of $3,000 per megawatt. The amount shall be paid for all years of operation, through implementation of Mitigation Measure MM 4.14-3. Through implementation of Mitigation Measure MM 4.14-4, 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. With this CIC and assessed taxes if the project is sold, the project impacts on public services and facilities and contribution to decline of communities is less than significant.

Mitigation Measures

MM 4.14-1: Prior to the issuance of grading or building permits the project proponent/operator shall develop and implement a fire safety plan for use during construction, operation and decommissioning.

The project proponent/operator shall submit the plan, along with maps of the project site and access roads, to the Kern County Fire Department for review and approval. A copy of the approved Fire Safety Plan shall be submitted to the Kern County Planning and Natural

Resources Department. The Fire Safety Plan shall contain notification procedures and emergency fire precautions including, but not limited to, the following:

a. All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.

b. Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types will maintain their factory-installed (type) muffler in good condition.

c. Fire rules shall be posted on the project bulletin board at the contractor's field office and areas visible to employees.

d. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.

e. Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them from growing into more serious threats.

f. The project proponent/operator shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.

MM 4.14-2: The following Cumulative Impact Charge (CIC) shall be implemented as payment on approved Conditional Use Permit acreage.

a. Submittal of Building Permit and Phasing

   i. Any building permit submitted shall be accompanied by a map and legal description showing a defined phase for which permits are being requested. All phases shall be numbered sequentially for identification.

   ii. The map for either the total project or a phase shall calculate the Cumulative Impact Charge (CIC) net acreage as follows:

      a) Total gross acreage (Phase)

      b) Total acres for Operations and Maintenance building permanent accessory improvements

      c) Total acres for Energy Storage structure and permanent accessory improvements

      d) Total acres of recorded easements

   iii. Formula: Net Acreage = (ii)a minus the sum of [(ii)b + (ii)c + (ii)d].

   iv. Temporary storage areas or non-permanent commercial coaches or cargo containers for construction or operations are not eligible for inclusion under (ii)b or (ii)c, above.

   v. All areas of buildings, accessory improvements and easement used in the calculations shall be shown on the submitted Phase Map.

vi. Any property included in the approved Conditional Use Permit that is not included in a phase must be included in the last phase or a formal modification processed to remove it from the Conditional Use Permit.

b. Calculation and Payment of Cumulative Impact Charge (CIC)

i. A payment of $620 per net acre for the map shown with the building permit submittal shall be paid upon issuance of the first building permit. If it is not paid within 30 days after the issuance of the first building permit for the phase regardless of the total number of building permits or type of building permit issued, all such permits shall be suspended until the fee is paid in full.

ii. Payments shall be made to the Planning and Natural Resources Department for transfer directly to the County Administrative Office Fiscal Division (CAO) and labeled Cumulative Impact Charge (CIC) with the project name and phase number.

iii. Any acres denoted for an operation and maintenance building or energy storage that are not built, cannot be used for solar panels unless payment is provided for the Cumulative Impact Charge (CIC)

MM 4.14-3: Written verification of ownership of the project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company with assessed taxes that total less than $3,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of $3,000 per megawatt. The amount shall be paid for all years of operation. The fee shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year.

MM 4.14-4: The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project proponent/operator obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization. As an alternative to the aforementioned process, the project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes.

MM 4.14-5: Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors 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 through MM 4.14-5, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or substantially increase other environmental impacts. Cumulative impacts for a project are considered significant if the incremental effects of the individual projects are considerable when viewed in connection with the effects of past projects, and the effects of other projects located in the vicinity of the project site. The cumulative impact analysis area for public services includes the service areas for each of the fire, police and other governmental offices/facilities serving the project site. For both the KCSO and the KCFD, service areas comprise unincorporated areas of Kern County. As discussed above, police and fire service impacts related to the proposed project would be less than significant. Mitigation Measure MM 4.14-1 requires implementation of a fire safety plan during project construction, operation and decommissioning that would include notification procedures and emergency fire precautions to help reduce fire risks and the consequential need for fire protection services onsite. Mitigation Measures MM 4.14-2 through MM 4.14-5 require the project proponent to pay a CIC to reduce significant impacts to all public services, including fire and law enforcement services, provided by the Kern County General Fund. Implementation of Mitigation Measures MM 4.14-2 through MM 4.14-5 would also prevent the decline of services in unincorporated communities that result in physical impacts on neighborhoods. Such cumulative impacts include increase in vandalism on public spaces such as parks, lack of road and park facilities maintenance, abandoned vehicles and buildings, trash abandonment on private property, and lack of funding for code enforcement of regulations for public health and safety, lack of services for homelessness prevention programs, as well as lack of services and facilities for elder, adolescent and child health and safety services and general mental health facilities. With payment of the required mitigation charge as assessed by the Kern County Planning and Natural Resources Department for transfer to the Kern County General Fund, impacts from the project's cumulative contribution to decline of services would be appropriately mitigated. Therefore, the project would not create a cumulatively considerable impact on public services even from the State of California Active Solar Energy Exclusion which creates a lack of fair share funding by the project for public services.

Mitigation Measures

Implement Mitigation Measures MM 4.14-1 through MM 4.14-5.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.14-1 through MM 4.14-5, cumulative impacts would be less than significant.

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Section 4.15
Transportation and Traffic

4.15.1 Introduction

This section of the EIR 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 Transportation and Traffic Impact Analysis Memorandum (Kittelson & Associates, 2020), which is provided in Appendix N of this EIR.

4.15.2 Environmental Setting

The project is located on approximately 1,406 acres in the southeastern portion of Kern County, approximately 50 miles southeast of the City of Bakersfield, 20 miles south of the City of Tehachapi, and 5.5 miles west 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**, *Site Vicinity*, of this EIR.

Regional Setting

Major Highways

The project site is located near four major highways that would provide access to the general vicinity of the proposed project during the construction and operation phases. Interstate 5 (I-5) is the largest highway that would provide regional access to the project site from the north and the south directions. State Route 138 (SR-138) intersects with I-5 and State Route 14 (SR-14) and runs south of the project site. SR-14 (Antelope Valley Freeway) connects SR-138 to population centers northeast and southeast of the project site, providing primary access. State Route 58 (SR-58) intersects with I-5 west of Bakersfield and runs east-west, north of the project site.

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 3 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 8 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 a grade-separated interchange near the project site at Rosamond Boulevard.

State Route 58 is an east-west divided highway that provides regional access to the project site (SR-58 is located approximately 9.5-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 15 miles northeast of the project site (Caltrans, 2019a). 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.

A portion of the Pacific Crest National Scenic Trail (commonly known as the Pacific Crest Trail or PCT) is located approximately 4.5 miles west of the project site.

Other Transportation Facilities

Public Transportation

Public transportation in Kern County is provided by Kern 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 unincorporated 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 9 miles east of the project site.

Airport Facilities

Lloyd's Landing Airport is the nearest private airstrip, located approximately 2 miles to the northeast of the project site. Lloyd's Landing Airport is a private facility with an approximately 1,370-foot dirt runway. The facility receives no regular scheduled flights and is not publically accessible.

Rosamond Skypark is a privately-owned and operated residential airport that is open for public use, and is located about 5.5 miles east 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 is a public airfield located about 10 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.

Mountain Valley Airport is a private airport that allows public access located approximately 15 miles to the north of the project site. The airport has two runways, each 4,890 feet long, and primarily serves general aviation aircraft, with some military flights also using the facility. In operation since 1968, the airport serves an average of 137 flight operations per day.

Mojave Air and Space Port is a public airfield located about 15 miles northeast of the project site. This airport has three asphalt runways (with lengths of 3,946, 7,049, and 12,503 feet) and primarily serves general aviation aircraft, with some commercial, air taxi, and military flights also using the facility. In operation since 1940, the airport serves an average of 48 flight operations per day. In 2004, this facility was the first to be certified as a spaceport by the FAA.

Edwards Air Force Base is a military base and airstrip located approximately 24 miles east of the project site. The base is owned and operated by the U.S. Air Force (not open to public use), and includes three runways that range in length from 8,000 feet to 12,000 feet and that are paved with concrete or asphalt. The base covers more than 301,000 acres, and also includes additional landing areas on the hard packed surface of the Rogers Dry Lake and Rosamond Dry Lake. The base also supports the U.S. space shuttle program as a backup landing site.

Local Setting

Site Access

The primary access route to the project site is from SR-14 by way of either Rosamond Boulevard to the south or 100th Street from the east.

Traffic Analysis

Considering the access routes described above, this traffic impact analysis evaluates the following five study intersections (three signalized, two unsignalized) in the vicinity of the project site, where project traffic would contribute turning vehicles:

1. 90th Street & Rosamond Boulevard (all-way stop controlled)
2. Tropico Road-55th Street & Rosamond Boulevard (all-way stop controlled)
3. 30th Street & Rosamond Boulevard (signal)
4. SR-14 Southbound Off-Ramp-Acacia Street & Rosamond Boulevard (signal)
5. SR-14 Northbound Ramps & Rosamond Boulevard (signal)

The gen-tie and Southern California Edison (SCE) infrastructure for both Facilities, which would consist of both existing and new gen-tie and/or connection lines, are proposed 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.

Existing AM and PM peak hour turning movement volumes were field measured at the study intersections in April 2018. As shown in **Table 4.15-1**, *Existing Conditions AM and PM Peak Hour Level of Service* (LOS), the intersections serving the project area currently operate at LOS D or better during the analyzed time periods based on average intersection delay and roadway volume-to-capacity (v/c) ratios.[1]

TABLE 4.15-1: EXISTING CONDITIONS AM AND PM PEAK HOUR LEVEL OF SERVICE

Study Intersection	AM Peak Hour	PM Peak Hour
1. 90th Street & Rosamond Boulevard	LOS A	LOS A
2. Tropico Road-55th Street & Rosamond Boulevard	LOS B	LOS A
3. 30th Street & Rosamond Boulevard	LOS D	LOS C
4. SR-14 Southbound Off-Ramp-Acacia Street & Rosamond Boulevard	LOS A	LOS A
5. SR-14 Northbound Ramps & Rosamond Boulevard	LOS A	LOS C

SOURCE: Kittelson & Associates, 2020

4.15.3 Regulatory Setting

Federal

Federal Aviation Administration (FAA)

The FAA regulates aviation at regional, public, and private airports. The FAA regulates objects affecting navigable airspace. According to 49 Code of Federal Regulations Part 77.9, any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA of:

- Any construction or alteration exceeding 200 feet above ground level;
- Any construction or alteration:
  - Within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway where the longest airport runway exceeds 3,200 feet in actual length;
  - Within 10,000 feet of a public use or military airport which exceeds a 50:1 surface from any point on the runway where the longest airport runway is less than 3,200 feet in actual length; and
  - Within 5,000 feet of a public use heliport which exceeds a 25:1 surface;
- Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed the above standards;

[1] The minimum LOS for conformance with the Kern County General Plan is LOS D.

- When requested by the FAA; and
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

Failure to comply with the provisions of Federal Aviation Regulation Part 77 is subject to civil penalty under Section 902 of the Federal Aviation Act of 1958, as amended, and pursuant to 49 United States Code Section 46301(a).

State

California Department of Transportation

Caltrans has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. Eastern Kern County (i.e., including the project site and surrounding area) has been under the jurisdiction of Caltrans District 9 as of November 2015; prior to that time, all of Kern County was under the jurisdiction of Caltrans District 6. The Caltrans regulations below apply to potential transportation and traffic impacts of the project.

California Vehicle Code (CVC), Division 15, Chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

California Street and Highway Code, Sections 660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of State and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

Project Development Procedures Manual, Chapter 27. Access Control Modification. Requires Caltrans approval of proposed connections to a public road through submittal of a proposal to Caltrans (Caltrans, 2019b).

Local

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan Circulation Element for transportation that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference. The design 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 2: This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond 2010. Where the Kern County Planning and Natural Resources Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert regions for arterial right-of-way. The County shall routinely protect all midsection lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow construction on surveyed section and midsection lines, right-of-way width shall be the size shown on the diagram map. No surveyed section and midsection "grid" will comprehensively apply to the Mountain Region.

Policy 3: This plan's road-width 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. The Planning Department can help developers and property owners in identifying where planned circulation is to occur.

2.3.4 Future Growth

Goal

Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

Policies

Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below LOS D. Utilization of the California Environmental Quality Act (CEQA) process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space, and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.

Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along state routes are necessary then roads shall be built to California Department of Transportation (Caltrans) standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.

Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.

Policy 6: The County may accept a developer's road into the County's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.

Implementation Measures

Measure A: The County should relate traffic levels to road capacity and development levels. To accomplish this, the Kern County Roads Department and the Kern County Planning and

Natural Resources Department should set up a monitoring program. The program would identify traffic volume to capacity ratios and resulting level of service. The geographic base of the program would be traffic zones set up by Kern Council of Governments.

Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

2.3.6 Vacation of Existing or Recorded Future Streets, Highways, or Public Easements

Goal

Goal 2: Kern County intends to set up a system maintaining and coordinating road vacation procedures in all elements of the General Plan and the incorporated cities general plans.

Policies

Policy 1: A road vacation influencing the construction or operation of expressway, an arterials or collector highway may occur with, or after, amending this Element. Kern County will not vacate any public expressway, arterial or collector highway right-of-way without amendment to this Element. The County will need to amend the right-of way status to local or commercial-industrial streets.

Policy 2: A study, prepared at the applicant's expense, shall accompany the road vacation application. The study should provide information that will aid in finding the importance of the entire length of the right-of-way. The study would include a review of existing and proposed land uses and localized traffic modeling. This will help Kern County decide what corresponding changes are needed to the Land Use, Open Space and Conservation Element, or affected specific plan. This also will help Kern County decide if additional public road services or other traffic management are required elsewhere.

Policy 3: If the road vacation applicant is a private entity, all costs for the public hearing shall be borne by the applicant. Also, costs associated with providing any necessary additional public road services or other traffic management caused by the road vacation shall be paid by the applicant.

Policy 4: The vacation of a road shall not take away legal access to adjacent properties or "land-lock" any legal lot or parcel of record. Legal access shall be determined through a report submitted with the application for road vacation.

Policy 5: If Kern County determines that the right-of-way is not needed for circulation in the general area, a road vacation may be authorized. An acceptable project shall be determined through a report submitted with the road vacation application and in keeping with traffic modeling parameters of this Plan.

Policy 6: A road vacation may be authorized if physical conditions such as natural, or manmade topography prevent rational extension of the facility. Physical conditions affecting roadways shall be determined through a report submitted with the road vacation application.

Policy 7: A road vacation shall only affect public, recorded rights-of-way or public service easements. The potential effects of a road vacation upon rights-of-way and easements are to be determined by a report submitted with the road vacation application. A vacation of private access or private service easement is not under County jurisdiction. Kern County considers these matters "civil" actions. These civil actions should be acted upon accordingly.

Policy 8: A road vacation may be authorized if the right-of-way is not improved or used for its original purpose. Existing improvements and facility use shall be determined by a report submitted with the road vacation application.

Policy 9: A road vacation may be authorized to remove excess right-of-way caused by relocation, or at the beginning of a general plan amendment proceeding. Excess right-of-way shall be determined through a report submitted with the road vacation application.

Policy 10: A road vacation may be approved if there is an agreement to close a public street. A road vacation may be approved with acknowledgment of an impassable street. A road vacation may be approved with a land division map over the area of vacation if the project has comparable methods of vehicular access.

Policy 11: A road vacation procedure may be used for considering public service easement or utility service easement abandonments. The procedure is the same as any public right-of-way vacation.

Policy 12: A vacation of improved road right-of-way, or public service easement, should not occur until the lead agency makes findings. One important finding is the land is no longer needed for public use. A vacation of improved road right-of-way, or public service easement, should not occur until the right-of-way is superseded by relocation, and improved to acceptable Kern County Development standards. The Board of Supervisors shall have accepted the replacement facility into the maintained road system.

Policy 13: A general vacation proceeding (consistent with State of California Streets and Highway Code) will require a public hearing when the vacation affects existing in place facilities or is a project caused by relocating right-of-way.

Policy 14: A summary vacation shall be consistent with State of California Streets and Highway Code. A summary vacation may be used when the right-of-way does not exist, is unused, or moved. A summary vacation may be used where right-of-way is impassable, unnecessary for present or prospective public use, or is excess or public service easement land.

Implementation Measures

Measure A: Kern County should require a research fee to determine if a complex vacation application is acceptable.

Measure B: In resolving a vacation request, the Board of Supervisors will follow the policies and laws applicable to such vacation request. Before taking final action, the Board of Supervisors may require the applicant to submit additional study(s). Staff shall oversee the applicant's information gathering process and suggest alternatives if necessary.

Measure C: The Planning Department shall issue guidelines for applicants to use in the preparation of road vacation applications and attendant reports.

2.3.10 Congestion Management Programs

State law requires that urbanized counties prepare an annual congestion management program (CMP). City and county eligibility for new gas tax subventions is contingent upon their participation in the congestion management program. To qualify for funding provided through the State Transportation Improvement Program (STIP) or the Federal Transportation Improvement Program (FTIP), the regional transportation agency must keep current a Regional Transportation Program (RTP) that contains the CMP. Also, the CMP offers local jurisdictions the opportunity to find cooperative solutions to the multi-jurisdictional problems of air pollution and traffic congestion.

The CMP has links with air quality requirements. The California Clean Air Act requires that cities and counties implement transportation control measures (TCMs) to attain, and maintain, the State air quality standard.

Goals

Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern Council of Government's Congestion Management Program.

Goal 2: To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.

Policies

Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated Kern Council of Governments as the County's Congestion Management Agency (CMA).

Policy 2: The Congestion Management Agency is responsible for developing, adopting, and annually updating a Congestion Management Plan. The Plan is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also Kern Council of Governments), regional transportation providers, local governments, Caltrans, and the air pollution control district.

Implementation Measures

Measure A: Kern County Council of Governments should request the proper consultation from County of Kern to develop and update the proper congestion management program.

Measure B: The elements within the Kern Congestion Management Program are to be implemented by each incorporated city and the County of Kern. Specifically, the land use analysis program, including the preparation and adoption of deficiency plans is required. Additionally, the adoption of trip reduction and travel demand strategies are required in the Congestion Management Program.

2.5.1 Trucks and Highways

The Kern County road network handles a high ratio of heavy truck traffic. State highways carry most of this traffic. Most of the trucks are interstate carriers. As such, interstate trucking is not under the direct control of County officials. In as much as this traffic affects County residents and taxpayers, they need actions to guarantee State highways in Kern County receive a fair share of California's transportation investment.

Goals

Goal 1: Provide for Kern County's heavy truck transportation in the safest way possible.

Goal 2: Reduce potential overweight trucks.

Goal 3: Use State Highway System improvements to prevent truck traffic in neighborhoods.

Policies

Policy 1: Caltrans should be made aware of the heavy truck activity on Kern County's roads.

Policy 2: Start a program that monitors truck traffic operations.

Policy 3: Promote a monitoring program of truck lane pavement condition.

Willow Springs Specific Plan

The entire project is subject to the provisions of the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in April 2008 and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Area. The transportation-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project are outlined below (Kern County, 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included.

Circulation Element

Goals

Goal 5 To maintain public safety within the plan area by providing a more direct and efficient circulation system for law enforcement and fire protection vehicles.

Goal 7 To provide an adequate circulation system which will support the proposed land uses.

Policies

Policy 7 Require the widening of impacted roadways to handle increased traffic generated by new development.

Policy 8 Encourage resourceful air quality improvement and reduction methods.

Mitigation/Implementation Measures

Measure 9 A traffic study in accordance with the requirements of Kern County and CalTrans, as appropriate, shall be submitted for all discretionary projects. Study shall demonstrate consistency with the Willow Springs Specific Plan.

Measure 13 The Traffic Impact Fee Program implements Mitigation Measure 10 of the Willow Springs Final Environmental Impact Report (EIR).

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, 2018).

Kern County Airport Land Use Compatibility Plan (ALUCP)

The Kern County Airport Land Use Compatibility Plan (ALUCP) establishes procedures and criteria to assist Kern County and affected incorporated cities in addressing compatibility issues between airports and surrounding land uses. Lloyd's Landing, a private airstrip, is located approximately 2 miles northeast of the project site. The Rosamond Skypark is located approximately 5.5 miles east of the project site. The General William J. Fox Airfield is located approximately 10 miles southeast of the project site. The Mountain Valley Airport is located approximately 15 miles north of the project site. The Mojave Air and Space Port is located approximately 15 miles northeast of the project site. The project is also located approximately 24 miles west of the airstrips at Edwards Air Force Base. However, the project is not located within a designated Airport Land Use Compatibility zone.

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 Transportation and Traffic Impact Analysis Memorandum (Kittelson & Associates, 2020) attached as Appendix N of this EIR.

Build Year and Cumulative Traffic

As noted above in Section 4.15.2, *Environmental Setting*, existing AM and PM peak hour turning movement volumes were field measured at the study intersections in April 2018. In order to project background traffic volumes in the build year of 2021, the existing volumes were adjusted using a 3.3 percent growth rate based on regional growth rates from the Los Angeles County CMP for the Lancaster area (approximately four miles south of the project site). In order to evaluate the project considering cumulative traffic conditions, a list of projects in the vicinity of the project site was provided by the Kern County Planning Department. Based on the locations and types of projects provided in the cumulative projects list, peak hour turning movement volumes were calculated and added to the 2021 volumes. It was determined that project traffic generated by cumulative projects located further then six miles from the project site would not have a noticeable effect on traffic conditions at study intersections or roadway segments, and therefore vehicle trips that would be generated by those project were not considered in the cumulative traffic analysis for the proposed project.

Project Trip Generation, Distribution, and Assignment

Traffic accessing the project site is anticipated to come mainly from surrounding population centers such as Rosamond, Palmdale, Mojave, Lancaster, and Tehachapi. Project traffic would mainly utilize SR-14 to travel to and from the project site. SR-138 is located approximately six miles to the south of the project site, however many of the roadways connecting Rosamond Boulevard to SR-138 are unpaved. As such, it was assumed that vehicles traveling to/from SR-138 would connect to SR-14 and utilize Rosamond Boulevard

to access the project site. Based on current travel patterns and regional population distribution, it was estimated that two-thirds of the construction trips would be generated from communities located south of the project site and thus would travel to/from the south on SR-14. It is expected that one-third of the construction trips would be generated from communities located north of the project site and would travel to/from the north on SR-14.

This analysis was conducted to assess the level of impacts during the construction of both Facilities (Chaparral and Rabbitbrush). For the purposes of this analysis, the level of impacts was analyzed assuming each Facility was constructed one at a time, as well as both Facilities under construction simultaneously (as this would represent the worst-case scenario).

Construction

Traffic generated by construction of the proposed project would include four types of trips: construction workers, vendors, haul trucks, and water trucks. These vehicles would access the project site via Rosamond Boulevard. Construction related trips are expected to travel to and from the project site throughout the day and may occur during the weekday AM or PM peak hour. A passenger car equivalent (PCE) was applied to the trip generation to account for the size and maneuverability of the construction vehicles as compared to passenger vehicles. Consistent with other studies in the area and generally accepted PCE factors, a PCE factor of 2.0 was applied to the trip generation for vendor and haul trucks and a PCE factor of 1.5 was applied to the trip generation for water trucks. Trip generation estimates for construction traffic utilizing these roadways are presented in **Table 4.15-2**, *Project Trip Generation – Construction*.

TABLE 4.15-2: PROJECT TRIP GENERATION – CONSTRUCTION

			AM Peak Hour Trips		PM Peak Hour Trips	
Site	**Vehicle Type**	**Daily**	**Inbound**	**Outbound**	**Inbound**	**Outbound**
Rabbitbrush	Worker Vehicles	892	446	0	0	446
	Vendor Trucks	30	2	1	1	2
	Haul Trucks	0	0	0	0	0
	Water Trucks	180	9	9	9	9
	Total	**1,102**	**457**	**10**	**10**	**457**
Chaparral	Worker Vehicles	1,000	500	0	0	500
	Vendor Trucks	34	2	1	1	2
	Haul Trucks	4	1	0	0	1
	Water Trucks	200	10	10	10	10
	Total	**1,238**	**513**	**11**	**11**	**513**
Total PCEs All Facilities		***2,598***	***982***	***35***	***35***	***982***

SOURCE: Kittelson & Associates, 2020

As shown in the table, if both Facilities were constructed simultaneously, the proposed project would generate the equivalent of 2,598 weekday daily passenger-vehicle trips, 1,017 passenger-vehicle trips during the weekday AM peak hour (982 inbound and 35 outbound), and 1,017 passenger-vehicle trips during the weekday PM peak hour (35 inbound and 982 outbound).

Operation and Maintenance

The County's guidelines require that analysis be conducted at intersections where a project would generate 50 or more peak hour trips. Upon completion of the construction and testing phases, each facility would be operated by up to 10 full-time staff consisting of plant operators and maintenance technicians. Operations and maintenance staff would typically work during regular business hours Monday through Friday. During periods when non-routine maintenance or major repairs are in progress, the maintenance staff would typically work nights when the proposed project is not generating power to the grid. The proposed project may also utilize 24-hour security. In total, the proposed project is expected to generate fewer than 50 trips during the weekday AM and PM peak hours during operations and, therefore, would not require additional traffic-related analysis.

Thresholds of Significance

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

A project could have a significant adverse effect on transportation if it would:

a. Conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows:
    i. Metropolitan Bakersfield General Plan LOS C, and
    ii. Kern County General Plan LOS D
b. Conflict or be inconsistent with *CEQA Guidelines* section 15064.3, subdivision (b);
c. Substantially increases hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and
d. Result in inadequate emergency access.

Project Impacts

Impact 4.15-1: The project would conflict with a program, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows: Metropolitan Bakersfield General Plan LOS C and Kern County General Plan LOS "D."

The proposed project is not located in or near the metropolitan Bakersfield area. The proposed project would include a request for approval to allow the vacation of existing public access easements as well as an amendment to the Circulation Element of the Kern County General Plan and the Willow Spring Specific Plan. The approval to allow vacation of existing public access easements on the project site are shown in Chapter 3, *Project Description*, Figure 3-9, *Proposed Nonsummary Vacation of Public Access Easements, of this EI*R. The purpose of the request is to facilitate the optimal layout of solar panels by removing recorded but unused public rights-of-way on vacant land. These easements have been created by grant deed, and some dirt roads exist within the project refinement. As requested, the easement vacations would not eliminate any legal access for any property or persons in the area. The Circulation Element Amendment

(General Plan and Specific Plan) would remove sections and midsection line road reservations, as shown in Chapter 3, *Project Description*, Figure 3-8, *Amendment to Willow Springs Specific Plan Circulation Plan*, of this EIR. A full list of the sections and midsection line road reservations included in the amendment are included in Chapter 3, *Project Description*, of this EIR.

Construction

Intersection LOS

An analysis was done to determine the intersection LOS during the construction phase of the proposed project, which is expected to peak in 2021. The guidelines in the Caltrans publication *Guide for the Preparation of Traffic Impact Studies* (December, 2002), states that a facility is required to be analyzed when a project will generate more than 100 peak hour trips at a facility operating above a LOS C. While the proposed project would generate more than 100 peak hour trips at some of the study intersections, the scope also took into account the routes used to access the project site, by construction workers, vendors, haul trucks, and water trucks, and the intersections where the project traffic would be concentrated.

Table 4.15-3, *Project Construction AM and PM Peak Hour Intersection Level of Service*, shows the results of the analysis for project-generated construction traffic as well as the cumulative analysis of other projects within the six-mile buffer. The list of approved, but not yet constructed, solar and wind energy projects within the buffer zone is provided in Appendix N. Each of the cumulative projects was evaluated for its potential to contribute incrementally to the traffic impacts associated with the proposed project in the event that construction might take place concurrently. As noted previously, the level of impacts was analyzed assuming each Facility was constructed one at a time, as well as both Facilities under construction simultaneously (as this would represent the worst-case scenario)

TABLE 4.15-3: PROJECT CONSTRUCTION AM AND PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection	Peak Hour	2021	2021+ Rabbitbrush	2021+ Chaparral	2021+ All
1. 90th Street & Rosamond Boulevard	AM	LOS A	LOS C	LOS C	**LOS F**
	PM	LOS A	**LOS F**	**LOS F**	**LOS F**
2. Tropico Road-55th Street & Rosamond Boulevard	AM	LOS C	**LOS F**	**LOS F**	**LOS F**
	PM	LOS A	**LOS F**	**LOS F**	**LOS F**
3. 30th Street & Rosamond Boulevard	AM	LOS D	**LOS E**	**LOS E**	**LOS F**
	PM	LOS C	LOS C	LOS C	**LOS E**
4. SR-14 Southbound Off-Ramp-Acacia Street & Rosamond Boulevard	AM	LOS A	LOS A	LOS A	LOS A
	PM	LOS A	LOS A	LOS A	LOS A
5. SR-14 Northbound Ramps & Rosamond Boulevard	AM	LOS A	LOS B	LOS B	**LOS E**
	PM	LOS C	LOS D	**LOS E**	**LOS F**

NOTE: **BOLD** text indicates that the addition of construction traffic results in a significant impact.
SOURCE: Kittelson & Associates, 2020

Rabbitbrush Impacts

As shown in the table, all intersections would continue to operate at LOS D or better during both peak hours, except for the following intersections, where the addition of the project construction traffic may result in temporary significant impacts:

1. 90th Street & Rosamond Boulevard – Degrades from LOS A to LOS F during the PM peak hour
2. Tropico Road-55th Street & Rosamond Boulevard – Degrades from LOS C to LOS F during the AM peak hour and from LOS A to LOS F during the PM peak hour
3. 30th Street & Rosamond Boulevard – Degrades from LOS D to LOS E during the AM peak hour

Since Rabbitbrush is located on Rosamond Boulevard, construction traffic would use Rosamond Boulevard to access the project site from SR-14. As such, potential temporary significant impacts to traffic may occur along Rosamond Boulevard.

Chaparral Impacts

As shown in the table, all intersections would continue to operate at LOS D or better during both peak hours, except for the following intersections, where the addition of the project construction traffic may result in temporary significant impacts:

1. 90th Street & Rosamond Boulevard – Degrades from LOS A to LOS F during the PM peak hour
2. Tropico Road-55th Street & Rosamond Boulevard – Degrades from LOS C to LOS F during the AM peak hour and from LOS A to LOS F during the PM peak hour
3. 30th Street & Rosamond Boulevard – Degrades from LOS D to LOS E during the AM peak hour
5. SR-14 Northbound Ramps & Rosamond Boulevard – Degrades from LOS C to LOS E during the PM peak hour

Since Chaparral is also located on Rosamond Boulevard, construction traffic would use Rosamond Boulevard to access the project site from SR-14. As such, potential temporary significant impacts to traffic may occur along Rosamond Boulevard.

Simultaneous Construction Impacts

As shown in the table, all intersections would continue to operate at LOS D or better during both peak hours, except for the following intersections, where the addition of the project construction traffic may result in temporary significant impacts:

1. 90th Street & Rosamond Boulevard – Degrades from LOS A to LOS F during the both peak hours
2. Tropico Road-55th Street & Rosamond Boulevard – Degrades from LOS C to LOS F during the AM peak hour and from LOS A to LOS F during the PM peak hour
3. 30th Street & Rosamond Boulevard – Degrades from LOS D to LOS F during the AM peak hour and from LOS C to LOS E during the PM peak hour
5. SR-14 Northbound Ramps & Rosamond Boulevard – Degrades from LOS A to LOS E during the AM peak hour and from LOS C to LOS F during the PM peak hour

Summary of Construction LOS Impacts

The addition of the construction traffic for each Facility, if constructed one at a time, and both Facilities, if constructed simultaneously, may result in temporary significant impacts to traffic at the study intersections.

Due to the number of trips expected to be generated by construction activities, it is expected that temporary significant impacts to traffic may occur at other intersections along the Rosamond Boulevard corridor as well.

Although these impacts would temporary in nature, and the proposed project would not result in significant impacts after it is open and operational, mitigation to reduce the magnitude of temporary construction-related impacts are warranted (see Mitigation Measures MM 4.15-1 and MM 4.15-2, below).

Operation and Maintenance

As noted previously, the proposed project is expected to generate fewer than 50 trips during the weekday AM and PM peak hours during operations. The County's guidelines require that analysis be conducted at intersections where a project would generate 50 or more peak hour trips. Therefore, an analysis of LOS conditions for project operation and maintenance was not conducted, and the impact is presumed to be less than significant.

Decommissioning

Decommissioning of the proposed project would result in impacts similar to those caused by the project construction traffic, but the duration would be about one-third less than project construction (approximately four months). Therefore, decommissioning of the project would result in a potentially significant impact with respect to LOS for roadways.

Mitigation Measures

A sensitivity analysis was conducted at the study intersections to determine the number of project construction-generated trips that could be added to the study intersections without resulting in a significant impact (i.e., maintain a LOS D or better). Based on this analysis, it was determined that the Rabbitbrush and Chaparral Facilities could generate a combined total of 240 inbound construction worker vehicle trips during the AM peak hour and a total of 350 outbound construction worker vehicle trips during the PM peak hour and continue to have acceptable LOS D or better at the study intersections along Rosamond Boulevard. This construction worker vehicle trip allowance was distributed evenly to Rabbitbrush and Chaparral (each Facility could generate 120 inbound construction worker vehicle trips during the AM peak hour and 175 outbound construction worker vehicle trips during the PM peak hour if their construction activities occur simultaneously). Should the Rabbitbrush and Chaparral Facilities be constructed one at a time and not simultaneously, each Facility could generate 240 inbound construction worker vehicle trips during the AM peak hour and 350 outbound construction worker vehicle trips during the PM peak hour and continue to have acceptable LOS D or better at the study intersections along Rosamond Boulevard.

MM 4.15-1: Prior to the issuance of construction or building permits for each Facility, the project proponent/operator shall implement measures to ensure peak hour construction worker vehicle limits are maintained during the AM and PM peak hours in order to maintain LOS D or better at the study intersections. These measures may include, but are not limited to the following:

a. The Construction Traffic Control Plan (see MM 4.15-2, below) shall outline the methods used to count worker vehicle traffic arriving and departing from the project site during peak AM and PM hours, methods used to control the number of trips during these hours, and documentation of reasonable coordination efforts with other projects in the area to avoid impacts to study intersections.

b. The project proponent/operator shall limit construction worker vehicle trips to and from the site to the extent possible during the AM and PM peak periods (i.e., 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.).

c. If monitoring indicates that either AM or PM peak hour construction trips may exceed the peak hour construction worker vehicle limits, the project proponent/operator shall implement measures to reduce peak hour passenger vehicle trips. These measures could include:

    i. Scheduling construction worker shifts so that a majority of the workers arrive and depart the project site outside the AM and PM peak periods.

    ii. Staggering construction worker shifts so that construction worker vehicle trips are distributed over a broader period (i.e., construction workers arrive in staggered shifts starting from 6:00 a.m. and depart in staggered shifts starting from 2:00 p.m.).

    iii. Instituting incentives and providing options for construction workers to carpool and/or vanpool to and from the project site.

MM 4.15-2: Prior to the issuance of construction or building permits for each Facility, the project proponent/operator shall:

a. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 9, as appropriate, for approval. The Construction Traffic Control Plan must be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and must include, but not be limited to, the following issues:

    i. Timing of deliveries of heavy equipment and building materials. To the extent feasible, restrict deliveries and vendor vehicle arrivals and departures during either the AM and PM peak periods;

    ii. Directing construction traffic with flaggers along the Rosamond Corridor;

    iii. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;

    iv. Ensuring access for emergency vehicles to the project sites;

    v. Coordinate construction activities with nearby schools that could be affected by increased vehicle delay along Rosamond Boulevard (i.e., Tropico Middle School and Rosamond High School);

    vi. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;

    vii. Maintaining access to adjacent property;

    viii. Specifying both construction-related vehicle travel and oversize load haul routes and avoiding residential neighborhoods to the maximum extent feasible; and

ix. Consult with the County to develop coordinated plans that would address construction-related vehicle routing and detours adjacent to the construction area for the duration of construction overlap with neighboring projects. Key coordination meetings would be held jointly between applicants and contractors of other projects for which the County determines impacts could overlap.

b. 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 Caltrans.

c. Enter into a secured agreement with Kern County to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and/or Kern County.

d. Submit documentation that identifies the roads to be used during construction. The project proponent/operator shall be responsible for repairing any damage to non-county maintained roads that may result from construction activities. The project proponent/operator shall submit a preconstruction video log and inspection report regarding roadway conditions for roads used during construction to the Kern County Public Work Department-Development Review and the Kern County Planning and Natural Resources Department.

e. Within 30 days of completion of construction, the project proponent/operator shall submit a post-construction video log and inspection report to the County. This information shall be submitted in DVD format. The County, in consultation with the project proponent/operator's engineer, shall determine the extent of remediation required, if any.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.15-1 and MM 4.15-2, impacts would be less than significant.

Impact 4.15-2: The project would conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards developed by the county congestion management agency for designated roads or highways.

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, guidance from the State of California Office of Planning and Research's (OPR) December 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Guidelines), was relied upon in this EIR to determine the significance of transportation impacts (OPR, 2018).

Impacts due to construction activities would be temporary and would not result in any meaningful long-term or permanent change in VMT; therefore, the evaluation of VMT is focused on project operation. As defined in *CEQA Guidelines* section 15064.3, subdivision (a), VMT refers to the amount and distance of automobile travel attributable to a project. The Technical Guidelines further explain that the automobile in section 15064.3 "refers to on-road passenger vehicles, specifically cars and light trucks." For this reason, this VMT analysis only considers passenger vehicle (i.e., cars and light trucks) trips generated by the project. However, this EIR also includes an analysis of GHG emissions associated with heavy truck traffic generated by the project (as well as other traffic), and addresses potential significant transportation impacts of all project vehicles, including heavy trucks, related to air quality, noise, and safety.

The Technical Guidelines provide a screening criterion that could be used to determine if VMT analysis is warranted for small projects, which are defined as projects that would generate fewer than 110 trips per day and may generally be assumed to cause a less-than-significant transportation impacts. As indicated above in **Table 4.15-2**, *Project Trip Generation – Construction*, project operation would generate fewer than 50 vehicle trips per day. Therefore, daily passenger vehicle trips generated by the project would be well below OPR's recommended small-project screening criterion threshold of 110 trips per day, and the project's impact to VMT would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.15-3: The project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

During construction, the project would require the delivery of heavy construction equipment and PV solar components using area roadways, some of which may require transport by oversize vehicles. Heavy equipment associated with these components would not be hauled to/from the site daily, but rather would be hauled in and out on an as-needed basis. Nevertheless, the use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space, which is considered a potentially significant impact.

The project would not include a design feature or utilize vehicles with incompatible uses that would create a hazard on the roadways surrounding the project site. Chain-link security fencing would be installed around the perimeter of the facilities and other areas requiring controlled access, prior to commencement of construction, in order to restrict public access during construction and operations. Additionally, the project would not include the development of sharp curves, dangerous intersections or other hazardous design features. The project would be set back from the roadways as required by Kern County Zoning Ordinance. Additionally, the need for and number of escorts, California Highway Patrol escorts, as well as the timing of transport, would be at the discretion of Caltrans and Kern County, and would be detailed in respective oversize load permits. Thus, potential impacts would be reduced to a less-than-significant level.

While impacts would be less than significant, Mitigation Measure MM 4.15-2 would require that all oversize vehicles used on public roadways during construction obtain required permits and obtain approval of a Construction Traffic Control Plan, as well as identify anticipated construction delivery times and vehicle travel routes in advance to minimize construction traffic during AM and PM peak hours. This would ensure that construction-related oversize vehicle loads are in compliance with applicable California Vehicle Code sections and California Street and Highway Codes applicable to licensing, size, weight, load, and roadway encroachment of construction vehicles.

Mitigation Measures

Implement Mitigation Measure MM 4.15-2.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.15-2, impacts would be less than significant.

Impact 4.15-4: The project would result in inadequate emergency access.

The project site is located in a rural area with the primary access road (Rosamond Boulevard) allowing adequate egress/ingress to the site in the event of an emergency. Additionally, as part of the project, additional onsite access roadways (internal to the site) would be constructed. Therefore, the development of the proposed project would not physically interfere with emergency vehicle access or personnel evacuation from the site.

As described above, increased project-related traffic would cause a significant increase in congestion and or significantly worsen the existing service levels at intersections on area roads; therefore, project-related traffic could affect emergency access to the project site or any other surrounding location. The proposed project would not require closures of public roads, which could inhibit access by emergency vehicles. For these reasons construction and operation would have a less-than-significant impact on emergency access.

To mitigate the potential impact of increased congestion on emergency access, Mitigation Measures MM 4.15-1 and MM 4.15-2 would provide further assurances for emergency access. Mitigation Measure MM 4.15-1 requires that the construction contractor for the proposed project phase construction of both Facilities in sequential order rather than simultaneous construction of both Facilities. This measure would reduce overall congestion at study area intersections. Mitigation Measure MM 4.15-2 requires the preparation of a Construction Traffic Control Plan that considers access for emergency vehicles to the project site.

Mitigation Measures

Implement Mitigation Measures MM 4.15-1 and MM 4.15-2.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.15-1 and MM 4.15-2, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative impacts from the project, when considered with nearby, reasonably foreseeable planned projects, would occur only during project construction because project operation traffic would be very minimal. As stated above in the evaluation of operational impacts, there would be minimal trip generation once construction activities have concluded. Therefore, operation of the project would result in less-than-significant cumulative impacts.

The potential for cumulative construction impacts exists where there are multiple projects proposed in an area that have overlapping construction schedules that could affect similar resources. As stated above in the discussion of Impact 4.15-1, the analysis of 2021 traffic conditions includes project construction traffic in combination with traffic that would be generated by cumulative projects within a six-mile radius of the project site. As shown in **Table 4.15-3**, *Project Construction AM and PM Peak Hour Intersection Level of Service*, some study intersections would operate below an acceptable level of service according to the County's LOS standards during one or both peak hours with the addition of project construction traffic and cumulative traffic through the build year. Therefore, cumulative construction traffic impacts would be potentially significant.

On the project-level (including the development of the gen-tie line), the project would not include a design feature or utilize vehicles with incompatible uses that would create a hazard on the surrounding roadways with implementation of mitigation measures. And, implementation of mitigation measures would ensure the project's contribution to emergency access and design hazards are reduced to a less than cumulatively considerable level.

Mitigation Measures

Implement Mitigation Measures 4.15-1 and 4.15-2.

Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.15-1 and 4.15-2, cumulative impacts would be less than significant.

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Section 4.16
Tribal Cultural Resources

4.16.1 Introduction

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 Senate Bill 18 (SB 18) and CEQA requirements prompted by Assembly Bill 52 (AB 52), located in Appendix F of this EIR.

4.16.2 Environmental Setting

Refer to Section 4.5, *Cultural Resources*, of this EIR for a greater discussion of the tribal cultural resources environmental setting.

Existing Tribal Cultural Resources

Native American SB 18 and AB 52 Consultation

As indicated in the Phase I Cultural Resources Survey for the project (Appendix F-1), a Sacred Lands File (SLF) search through the NAHC did not identify sacred sites or tribal cultural resources in the project vicinity. A second search of the SLF, dated August 9, 2018 and requested by the County for purposes of SB 18 compliance, also returned negative results.

As part of the County's government-to-government responsibilities pursuant to AB 52, on July 31, 2018, the County sent consultation notification letters via certified mail to four California Native American tribal contacts on the County's Master List for AB 52 consultation. Similarly, as part of the County's government-to-government consultation responsibilities pursuant to both SB 18 and AB 52, on August 16, 2018, the County sent outreach letters via certified mail to 13 California Native American tribal contacts identified by the NAHC. Results of the outreach are shown in **Table 4.16-1**, *AB 52 and SB 18 Native American Consultation*. To date, one response has been received from Jessica Mauck, Cultural Analyst for the San Manuel Band of Mission Indians (San Manuel), requesting formal consultation pursuant to AB 52 and SB 18. The correspondence between the County and San Manuel is summarized below following **Table 4.16-1,** *B 52 and SB 18 Native American Consultation.*

TABLE 4.16-1: AB 52 AND SB 18 NATIVE AMERICAN CONSULTATION

Contact	Tribe	Legal Requirement	Date of Letter	Response
Anthony Madrigal, Jr., Tribal Grants	Twenty-Nine Palms Band of Mission Indians	AB 52	July 31, 2018	No response
Darrell Mike, Tribal Chairman	Twenty-Nine Palms Band of Mission Indians	AB 52	July 31, 2018	No response

Contact	Tribe	Legal Requirement	Date of Letter	Response
Michael Mirelez, Cultural Resources Coordinator	Torres Martinez Desert Cahuilla Indians	AB 52	July 31, 2018	No response
Ann Brierty, Cultural Resources Field Specialist	San Manuel Band of Mission Indians	AB 52	July 31, 2018	Jessica Mauck, cultural resources analyst for San Manuel responded with a request for formal consultation.
Danelle Gutierrez, Tribal Historic Preservation Officer	Big Pine Paiute Tribe of the Owens Valley	SB 18 and AB 52	August 16, 2018	No response
Genevieve Jones, Chairperson	Big Pine Paiute Tribe of the Owens Valley	SB 18 and AB 52	August 16, 2018	No response
Julio Quair	Chumash Council of Bakersfield	SB 18 and AB 52	August 16, 2018	No response
Robert Robinson, Chairperson	Kern Valley Indian Community	SB 18 and AB 52	August 16, 2018	No response
Julie Turner, Secretary	Kern Valley Indian Community	SB 18 and AB 52	August 16, 2018	No response
Delia Dominguez, Chairperson	Kitanemuk and Yowlumne Tejon Indians	SB 18 and AB 52	August 16, 2018	No response
Lee Clauss, Director – CRM Department	San Manuel Band of Mission Indians	SB 18 and AB 52	August 16, 2018	Jessica Mauck, cultural resources analyst for San Manuel responded with a request for formal consultation
Lynn Valbuena	San Manuel Band of Mission Indians	SB 18 and AB 52	August 16, 2018	Jessica Mauck, cultural resources analyst for San Manuel responded with a request for formal consultation
Rueben Barrios, Sr., Chairperson	Santa Rosa Community of the Santa Rosa Rancheria	SB 18 and AB 52	August 16, 2018	No response
Octavio Escobedo, Chairperson	Tejon Indian Tribe	SB 18 and AB 52	August 16, 2018	No response
Robert L. Gomez, Jr., Tribal Chairperson	Tubatalabals of Kern Valley	SB 18 and AB 52	August 16, 2018	No response
Neil Peyron, Chairperson	Tule River Indian Tribe	SB 18 and AB 52	August 16, 2018	No response
Kenneth Woodrow, Chairperson	Wuksache Indian Tribe	SB 18 and AB 52	August 16, 2018	No response

In an email dated August 29, 2018, Jessica Mauck, Cultural Analysist for the San Manuel, replied to the County's SB 18 and AB 52 consultation notifications stating the project is located in San Manual ancestral territory and that San Manuel elects to engage in formal consultation regarding the project. Ms. Mauck identified two areas of concern in relation to the project including the village of *Chibubit*, which falls within the project area, and Willow Springs, which is located just northeast of the project area. Ms. Mauck also requested the cultural and geotechnical studies prepared for the project including the Phase I cultural resources survey report, the paleontological resources report, and the geotechnical engineering reports, as well as project engineering plans showing extent of ground disturbance be provided to San Manuel for review upon availability. In that email, San Manuel requested the following for review upon availability, if required for the project:

- Cultural report
- Paleontological report
- Geotechnical report
- Project plans showing the vertical extent of proposed disturbance

In response, the County subsequently sent the following information to San Manuel:

- Paleontological report (on September 6, 2018)
- Geotechnical report (on September 6, 2018)
- Project plans showing the vertical extent of proposed disturbance (on September 6, 2018)
- Phase I Cultural Resources Survey (on October 30, 2018)
- Cultural Resources Phase 2 Survey (on February 2, 2020)

The consultation resulted in San Manuel identifying a potential tribal cultural resource – a landscape related to the village of *Chibubit*. Through further discussion with San Manuel, the County agreed to avoid the potential tribal cultural resource through project re-design, and the parties also agreed to mitigation measures to avoid impacts to identified eligible archaeological resources. On September 22, 2020, in an email, San Manuel confirmed that the proposed mitigation measures, received on September 22, 2020, were found to be acceptable. Refer to Section 4.5, *Cultural Resources*, for a discussion of impacts to archaeological resources and a list of mitigation measures.

4.16.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

Native American Heritage Commission

Public Resources Code (PRC) Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. Section 5097.98 of the PRC specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

Assembly Bill 52 and Related Public Resources Code Sections

AB 52 was approved by California State Governor Edmund Gerry "Jerry" Brown, Jr. on September 25, 2014. The act amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a Notice of Preparation or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015. The primary intent of AB 52 was to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans that require consideration under CEQA, known as tribal cultural resources. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe" that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR) or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency, in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for tribal cultural resources update to Appendix G of the *CEQA Guidelines*, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency's formal notification and the lead agency must begin consultation within 30 days of receiving the tribe's request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the project's impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage in the consultation process, or

if the lead agency has complied with Section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

Senate Bill 18

Senate Bill 18 (SB 18) (Statutes of 2004, Chapter 905), which went into effect January 1, 2005, requires local governments (city and county) to consult with Native American tribes before making certain planning decisions and to provide notice to tribes at certain key points in the planning process. The intent is to "provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places" (Governor's Office of Planning and Research, 2005).

The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level, land use designations are made by a local government. The consultation requirements of SB 18 apply to general plan or specific plan processes proposed on or after March 1, 2005.

According to the *Tribal Consultation Guidelines: Supplement to General Plan Guidelines* (Governor's Office of Planning and Research, 2005), the following are the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45-day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

Local

There are no applicable local regulations for this issue area.

4.16.4 Impacts and Mitigation Measures

Methodology

The proposed project's potential impacts to tribal cultural resources have been evaluated using a variety of resources, including an SLF search conducted by the NAHC. SB 18 and AB 52 notification letters were sent to Native American groups and individuals indicated by the NAHC to solicit information regarding the presence of tribal cultural resources. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

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

A project would have a significant impact on tribal cultural resources if it would:

1) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

    a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

    b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Project Impacts

Impact 4.16-1a: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).

The SLF searches conducted by the NAHC did not indicate the presence of tribal cultural resources within or immediately adjacent to the project site. As a result of AB 52 and SB 18 consultation, San Manuel identified a potential tribal cultural resource associated with the village of *Chibubit* within the project site. The County agreed to avoid the potential tribal cultural resource consistent with PRC section 21084.3. Since the potential tribal cultural resource is being avoided, it was not formally evaluated for listing in the CRHR or a local register. Because the potential tribal cultural resource is being avoided, impacts would be less than significant. As noted in Section 4.16.2, *Environmental Setting*, the County and San Manuel also agreed to mitigation measures to avoid impacts to archaeological resources. Refer to Section 4.5, *Cultural Resources*, for a discussion of impacts to archaeological resources and a list of mitigation measures.

Pursuant to Section 21080.3.2(b)(1) of AB 52, the lead agency considers the consultation concluded, as the parties have agreed to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource.

However, the lead agency notes that that Section 21080.3.2 (c) of AB52 states a follows:

(1) This section does not limit the ability of a California Native American tribe or the public to submit information to the lead agency regarding the significance of the tribal cultural resources, the significance of the project's impact on tribal cultural resources, or any appropriate measures to mitigate the impact.

(2) This Section does not limit the ability of the lead agency or project proponent to incorporate changes and additions to the project as a result of the consultation, even if not legally required.

Mitigation Measures

No mitigation would be required.

Level of Significance

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, San Manuel identified a potential tribal cultural resource within the project site as part of the AB 52 and SB 18 consultation process. The County agreed to avoid the potential tribal cultural resource consistent with PRC section 21084.3. Because the potential tribal cultural resource is being avoided, impacts would be less than significant. As noted in Section 4.16.2, *Environmental Setting*, the County and San Manuel also agreed to mitigation measures to avoid impacts to archaeological resources. Refer to Section 4.5, *Cultural Resources*, for a discussion of impacts to archaeological resources and a list of mitigation measures.

Pursuant to Section 21080.3.2(b)(1) of AB 52, the lead agency considers the consultation concluded, as the parties have agreed to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource.

However, the lead agency notes that that Section 21080.3.2 (c) of AB52 states a follows:

(1) This section does not limit the ability of a California Native American tribe or the public to submit information to the lead agency regarding the significance of the tribal cultural resources, the significance of the project's impact on tribal cultural resources, or any appropriate measures to mitigate the impact.

(2) This Section does not limit the ability of the lead agency or project proponent to incorporate changes and additions to the project as a result of the consultation, even if not legally required.

Mitigation Measures

No mitigation would be required.

Level of Significance

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 discussed in Chapter 3, *Project Description*, of this EIR, would have on tribal cultural resources. The geographic area of analysis for tribal cultural resources includes the western Antelope Valley. This geographic scope of

analysis is appropriate because the resources within this area are expected to be similar to those that occur on the project area because of their proximity, their similarities in environments and landforms, and their location within the same Native American tribal territories. This is a large enough area to encompass any effects of the project on tribal cultural resources that may combine with similar effects caused by other projects, and provides a reasonable context wherein cumulative actions could affect tribal cultural resources.

Multiple projects, including solar energy production facilities, are proposed throughout the Antelope Valley. Cumulative impacts to tribal cultural resources in the Antelope Valley could occur if other related projects, in conjunction with the proposed project, had or would have impacts on cultural resources that, when considered together, would be significant.

Potential impacts of the project to tribal cultural resources, in combination with other projects in the area, could contribute to a cumulatively significant impact due to the overall loss of resources unique to the region. As discussed above a potential tribal cultural resource was identified by San Manuel; however, through the consultation process mutually agreed upon mitigation measures for the avoidance of the tribal cultural resource were developed between San Manuel and the County. Therefore, no tribal cultural resources are anticipated to be impacted as a result of project implementation and the project would not have a cumulatively considerable contribution to impacts to tribal cultural resources.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

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Section 4.17
Utilities and Service Systems

4.17.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of the project pertaining to demand for operational utilities (water supply, stormwater, electricity, natural gas, telecommunications, and solid waste disposal). This section describes existing infrastructure and levels of service and evaluates whether any improvements would be necessary to accommodate the project. The information and analysis in this section is based on the project-specific *Preliminary Drainage Study* (Wallace Group, 2019) and *Water Supply Assessment First Solar AVEP Project, Tumbleweed Solar*,[1] *Rabbitbrush Solar*, *Chaparral Solar* (WSA) (AECOM, 2020) included in Appendix K and Appendix L of this EIR, respectively.

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 is located on approximately 1,406 acres of privately owned land located in the western extent of the Mojave Desert, approximately 5.5 miles west of the unincorporated community of Rosamond, California. The project site is not within the boundaries of an existing public water system's service area. The nearest existing water utility system is the Rosamond Community Services District (RCSD); the RCSD boundary is approximately 2.8 miles east from the project site at its closest point. The RCSD is unable to serve the project site since the project site itself is outside of the service boundaries (AECOM, 2019).

The project site is located in an area without a public water purveyor that can practicably provide water for the project. The only practicable water source for the project is the underlying Antelope Valley Groundwater Basin.

Groundwater Supply

The project site is located in the South Lahontan Hydrologic Region, and specifically within the Antelope Valley Groundwater Basin. The Antelope Valley Groundwater Basin is primarily fed from runoff from Big Rock and Little Rock Creeks, and from Oak Creek. Total water storage within the Antelope Valley Groundwater Basin is reported to be in the range of 68 million to 70 million acre-feet. The Antelope Valley

[1] The Tumbleweed site is no longer a part of the project.

Groundwater Basin covers about 940 square miles and is separated from the northern part of the Antelope Valley by faults and low-lying hills (USGS, 2014). Groundwater has been and is an important resource within the Antelope Valley given limits on the available local and imported surface water supply. One fundamental challenge in the Antelope Valley Region is that demand for water exceeds available supplies in future average and dry years. The historical declines in groundwater levels within the Antelope Valley Region have caused permanent damage to aquifers in some areas through land subsidence (Antelope Valley IRWMP, 2019). For a discussion of Antelope Valley Groundwater Basin characteristics, please refer to Section 4.10, *Hydrology and Water Quality*, of this EIR.

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 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 land owners and federally reserved water rights. The case defines who 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 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 (AVEK, 2016; Antelope Valley Watermaster, 2017).

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 and the Los Angeles County Waterworks District 40. 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 if groundwater is utilized.

Wastewater

Septic systems for the existing residential buildings are within the project site boundary. As proposed, the following restroom facilities would be serviced by septic tank:

- Restroom facilities inside of commercial coaches. Such restroom facilities would be onsite during the construction phase, and would accommodate the limited number of employees with access to the commercial coaches (however, all employees would have access to the portable toilets and portable hand washing facilities, which would be serviced by truck rather than utilizing septic system(s)).
- Restroom facilities inside of Operations and Maintenance (O&M) Building(s). Such restroom facilities would accommodate the 20 full-time equivalent (FTE) personnel (or personnel hours totaling 20 FTE positions) during the operational phase of the project.

Septic systems would be emptied as part of regular ongoing project-related maintenance.

Stormwater Drainage

As described in 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located in a remote, rural region with no existing or planned stormwater infrastructure. There are no existing stormwater drainage systems on the project site, and no stormwater drainage infrastructure is proposed as part of the project, although the project will incorporate drainage design features.

The project is in the South Lahontan Hydrologic Region, and specifically within the Willow Springs Sub-Watershed of the Antelope Valley Hydrologic Unit. The total drainage area for the basin is approximately 4,700 acres with an elevation change of 2,400 feet. The Willow Springs Sub-Watershed is a closed basin inside of the Antelope Valley; therefore, there is no connection to the ocean and any precipitation or surface water is transferred via ephemeral streams to existing playas. Water moves through the project site via sheet flow at a low flow rate. The closest playa to the project site is Rosamond Lake to the southeast of the project site, approximately 9 miles from the project site. The topography is such that runoff will not be directed towards Rosamond Lake as most rainfall infiltrates into the immediate surrounding soils quickly.

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 Operations Division of the Kern County Public Works Department administers or sponsors the following recycling programs, which contribute toward meeting State-mandated solid waste diversion goals:

- Recycling programs at landfills to recycle or divert a wide variety of products, such as wood waste, cathode ray tubes, tires, inert materials, appliances, etc.;
- Drop-off recycling centers for household recyclables. The County- and the City-operated drop-off recycling centers, which are located in the unincorporated metropolitan area and the city, may be used by both County and city residents;
- Financial assistance for operation of the City of Bakersfield Green Waste Facility;
- The Kern County Special Waste Facility for the disposal of household hazardous waste. Services are provided to all Kern County residents;
- Semi-annual “bulky waste” collection events, which are held in the Bakersfield area and available to both County and city residents (co-sponsor);
- Christmas tree recycling campaign (participates jointly with the City of Bakersfield);
- Telephone book recycling program (co-sponsors with Community Clean Sweep);
- Community Clean Sweep summer workshops called “Trash to Treasure,” which educate children about recycling and other Kern County Waste Management Department programs (sponsor);
- An innovative elementary school program called the “Clean Kids Hit the Road Puppet Show” (operates in collaboration with Community Clean Sweep); and
- Recycling trailers for churches, schools, and nonprofit organizations.

Landfills

The Kern County Public Works Department operates seven recycling and sanitary landfills throughout the County. Landfills are located in Bakersfield, Boron, Mojave-Rosamond, Ridgecrest, Shafter-Wasco, Taft, and Tehachapi (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 15.25 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 16.5 miles north of the project site at 12001 East Tehachapi Boulevard, in the City of Tehachapi, over the Tehachapi Mountains. However, the Tehachapi Sanitary Landfill is nearing the maximum permitted capacity and currently anticipated to close in 2020.

Electric Power, Natural Gas, and Telecommunications

Southern California Edison (SCE) has existing electrical and transmission facilities in the project area, including the SCE Tehachapi Renewable Transmission Project, SCE Whirlwind Substation, and SCE transmission line. Southern California Gas (SoCalGas) is the natural gas provider in this area of Kern County. No known natural gas pipelines or telecommunication lines exist at the project site. However, existing telecommunications facilities exist at the nearby North Rosamond Solar Project and Willow Springs Solar Project.

4.17.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

California Energy Commission

The California Energy Commission (CEC) is the state's primary energy policy and planning agency. Created in 1974, the CEC has five major responsibilities: forecasting future energy needs and keeping historical energy data, licensing thermal power plants 50 megawatts (MW) or larger, promoting energy efficiency through appliance and building standards, developing energy technologies and supporting renewable energy, and planning for and directing the state response to energy emergencies.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. In 1911, the CPUC was established by Constitutional Amendment as the Railroad Commission. In 1912, the Legislature passed the Public Utilities Act, expanding the Railroad Commission's regulatory authority to include natural gas, electric, telephone, and water companies as well as railroads and marine transportation companies. In 1946, the Railroad Commission was renamed the California Public Utilities Commission. It is tasked with ensuring safe, reliable utility service is available to consumers, setting retail energy rates, and protecting against fraud.

California Department of Resources Recycling and Recovery

California Department of Resources Recycling and Recovery (CalRecycle) is the state agency designated to oversee, manage, and track California's 76 million tons of waste generated each year. It is one of the six agencies under the umbrella of the California Environmental Protection Agency. CalRecycle administers and provides oversight for all of California' State-managed non-hazardous waste handling and recycling program. CalRecycle provides training and ongoing support for local enforcement agencies that regulate and inspect California's active and closed solid waste landfills (CalRecycle, 2019c).

State Water Resources Control Board and Regional Water Quality Control Board

The primary responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). The SWRCB sets statewide policy for the implementation of state and federal laws and regulations. The RWQCBs adopt and implement Water Quality Control Plans (Basin Plans), which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities. The project site is within the jurisdiction of the Lahontan RWQCB.

California Department of Water Resources

The DWR is responsible for protecting, conserving, developing, and managing much of California's water supply. These duties include: preventing and responding to floods, droughts, and catastrophic events; informing and educating the public on water issues; developing scientific solutions; restoring habitats; planning for future water needs, climate change impacts, and flood protection; constructing and maintaining facilities; generating power; ensuring public safety; and providing recreational opportunities.

California Water Code Section 13260

California Water Code Section 13260 requires any person who discharges waste, other than into a community sewer system, or proposes to discharge waste that could affect the quality of waters of the State to submit a report of waste discharge to the applicable Regional Water Quality Control Board (RWQCB). Any actions of the projects that would be applicable under California Water Code Section 13260 would be reported to the Lahontan RWQCB.

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. They require that water supply assessment occur early in the land use planning process for all large-scale development projects. If groundwater is the proposed supply source, the required assessments must include detailed analyses of historic, current, and projected groundwater pumping and an evaluation of the sufficiency of the groundwater basin to sustain a new project's demands. They also require an identification of existing water entitlements, rights, and contracts and a quantification of the prior year's water deliveries. In addition, the supply and demand analysis must address water supplies during normal, single and multiple dry years, presented in five-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 construction and demolition debris, have been targeted for participation in source-reduction, reuse, and recycling programs. The contractor is urged to manage solid waste generated by the work to divert waste from disposal in landfills (particularly Class III landfills) and maximize source reduction, reuse, and recycling of C&D debris.

Assembly Bill 341

Since the passage of AB 939, diversion rates in California have been reduced to approximately 65 percent, the statewide recycling rate is approximately 50 percent, and the beverage container recycling rate is approximately 80 percent. In 2011, the State passed AB 341, which established a policy goal that a minimum of 75 percent of solid waste must be reduced, recycled, or composted by the year 2020. The State provided the following strategies to achieve that 75 percent goal:

1. Moving organics out of the landfill;
2. Expanding the recycling/manufacturing infrastructure;
3. Exploring new approaches for state and local funding of sustainable waste management programs;
4. Promoting state procurement of post-consumer recycled content products; and
5. Promoting extended producer responsibility.

To achieve these strategies, the State recommended legislative and regulatory changes including mandatory organics recycling, solid waste facility inspections, and revising packaging. With regard to construction and demolition, the State recommended an expansion of California Green Building Code standards that incentivize green building practices and increase diversion of recoverable construction and demolition materials. Current standards require 50 percent waste diversion on construction and some renovation projects,

although this may be raised to 65 percent for nonresidential construction in upcoming changes to the standards. The State also recommends promotion of the recovery of construction and demolition materials suitable for reuse, compost or anaerobic digestion before residual wastes are considered for energy recovery.

California Solid Waste Reuse and Recycling Access Act of 1991 or Senate Bill 1327

The California Solid Waste Reuse and Recycling Access Act of 1991 (PRC Chapter 18) identified a lack of adequate areas for collecting and loading recyclable materials, resulting in a significant impediment to diverting solid waste. This act requires state and local agencies to address access to solid waste for source reduction, recycling, and composting activities. Each local agency must adopt an ordinance related to adequate areas for collecting and loading recyclable materials for development projects.

Local

Antelope Valley Integrated Regional Water Management Plan

The Antelope Valley Integrated Regional Water Management Plan (IVIRWMP) 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 agreed to contribute funds to help develop the AVIRWM Plan, provide and share information, review and comment on drafts, adopt the final AVIRWM Plan, and assist in future grant applications for the priority projects identified in the Plan. In January 2007, the RWMG have collectively defined a water resource management plan in the AVIRWMP, which describes a course of action to meet the expected demands for water within the entire Antelope Valley Region through 2035. In 2012, the RWMG developed an update to the AVIRWM Plan to incorporate changes to the Region's water resources that occurred since 2007. The AVIRWM Plan was revisited in 2017 and updated once again in two phases. The first phase revised the Plan to comply with the 2016 AVIRWM Grant Program Guidelines and the second phase (the 2019 AVIRWM Plan Update) conducted an extensive update of the AVIRWM Plan so that the Plan is reflective of the current conditions of the Region. The 2019 AVIRWM Plan Update extended the planning horizon through 2040. (Antelope Valley IRWMP, 2019).

The primary goals of the Antelope Valley IRWMP are to address the following:

- How to 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, enhance, and manage current water resources and the environmental resources for human and natural benefit within the Antelope Valley Region (Antelope Valley IRWMP, 2019).

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 Antelope Valley 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 Antelope Valley Groundwater Basin.

Kern County Integrated Waste Management Plan

The Kern County Public Works Department (KCPWD) is required by the State to plan and implement waste management activities and programs in the County unincorporated area to 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 65 percent of construction & demolition waste; and
- Recycling or reuse of 100 percent of tree stumps, rocks and associated vegetation and soils resulting from land clearing (Kern County, 2018).

Kern County Public Works Department Recycling Programs

The Waste Operations Division of the Kern County Public Works Department administers or sponsors the following recycling programs, which contribute toward meeting State-mandated solid waste diversion goals to achieve 75 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 (County of Kern, 2017).

Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for utilities and service systems applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference (Kern County, 2009).

1.4 Public Facilities and Services

Goals

Goal 1: Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.

Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.

Policies

Policy 1: New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

Policy 3: Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the CEQA documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Implementation Measures

Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

Measure D: Involve utility providers in the land use and zoning review process.

1.9 Resources

Goal

Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

1.10 General Provisions

1.10.1 Public Services and Facilities

Policies

Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.

Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.

Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

Implementation Measures

Measure C: Project developers shall coordinate with the local utility service providers to supply adequate public utility services.

Measure D: Involve utility providers in the land use and zoning review process.

Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.

Chapter 5. Energy Element

5.4.5 Solar Energy Development

Goal

Goal 1: Encourage safe and orderly commercial solar development.

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Policy 4: The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species.

Willow Springs Specific Plan

The project site is subject to the provisions of the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in April 2008 and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Area. The utilities and service systems-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project are outlined below (Kern County, 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included.

Public Facilities

Policies

(1) New development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.

(2) Operation of any solid waste facility shall comply with standards provided by the Kern County Solid Waste Management Plan.

Mitigation/Implementation Measures

(1) The siting and establishment of solid waste transfer stations, landfills, recycling center, and cleanup programs shall be in accordance with Kern County's Solid Waste Management Plan.

(2) Consideration shall be given to implementation of the following measure to reduce the impacts associated with solid waste generation:

a) Compacting refuse would substantially reduce the number of refuse hauling trips and allow for more effective and sanitary disposal.

b) Each project applicant shall comply with guidelines set forth by Kern County in accordance with AB 939 which mandates recycling programs for each jurisdiction in California and shall agree to be subject to universal collection for one- to four-unit residential projects and commercial.

Water Quality and Availability

Goal

To ensure that new developments are provided with an adequate water supply and wastewater disposal/treatment facilities.

Policies

(1) Water supply method and wastewater disposal/treatment facility shall be as required by Kern County.

(2) Separate environmental documentation shall be required for the methods of water supply and wastewater disposal/treatment selected.

4.17.4 Impacts and Mitigation Measures

Methodology

Potential impacts to utilities and service systems associated with construction and operation of the project have been evaluated using a variety of resources, including multiple online sources and published documents, as well as the project-specific *Preliminary Drainage Study* (Wallace Group, 2019) and *Water Supply Assessment First Solar AVEP Project, Tumbleweed Solar, Rabbitbrush Solar, Chaparral Solar* (AECOM, 2020) included in Appendix K and Appendix L of this EIR, respectively. 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 that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition the provider's existing commitments;

d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals; or

e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

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 majority of water use for the project would occur during the initial 12 to 24-month construction phase. Construction activities for the proposed project are anticipated to require approximately 600 acre-feet of water. The water supply for the project during construction would be supplied from one or more of the following options: 1) potential and/or existing well(s) on each individual facility site and/or well(s) which may be shared by the two facilities; 2) existing well(s) on the Willow Springs Solar project site. If water is supplied from the Willow Springs project site, it will be piped via temporary construction pipeline(s) or trucked; and 3) trucked Antelope Valley-East Kern Water Agency (AVEK) water collected at one of the nearby locations owned by AVEK. As discussed in the WSA (see Appendix L), the total water available through offsite water rights acquired is expected to be 4,123 acre-feet in 2020, well above the construction water requirements for construction of the project. Therefore, construction of the project would not require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Wastewater Treatment

Construction of the project would generate a minimal volume of wastewater. During construction activity, wastewater contained within portable toilet facilities and portable hand washing facilities would be disposed of at an approved offsite disposal site. The Kern County Public Health Services Department/Environmental Health Services Division is responsible for monitoring the use of portable toilet facilities, and the project proponent would be required 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, construction of the project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Stormwater Drainage

As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located in a remote, rural region with no existing or planned stormwater infrastructure. The project would be required to adhere to Kern County Public Works Department storm water requirements, which include measures to address stormwater controls on both management of runoff volume and water quality, including controlling erosion and protection of water quality of stormwater runoff. Additionally, 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.

Construction of the project is not expected to exceed the capacity of existing storm water drainage systems in the area. Therefore, operation of the project is not anticipated to result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Electric Power

Electricity is not expected to be consumed in large quantity during project construction, as construction equipment and vehicles are not electric (but rather diesel- or gasoline-powered). However, electricity is expected to be consumed from well-water pumping and for temporary construction offices (commercial coaches) during construction. Electricity for construction use would either be provided by diesel generators and/or a temporary SCE distribution line hookup would be installed on the project site. Because construction of the project would not displace existing electrical facilities, and would tie into existing off-site facilities, relocation of electrical facilities would not be required. Therefore, as construction of the project would not require or result in the relocation or construction of new or expanded electric power facilities, the construction or relocation of which could cause significant environmental effects, impacts would be less than significant.

Natural Gas

The project will not use natural gas during the construction phase. Therefore, construction of the project would not require or result in the relocation or construction of new or expanded natural gas facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Telecommunications

Telecommunication equipment including underground and overhead telephone, fiber optics and wireless communications infrastructure such as cellular, satellite, or microwave towers (for which CUP applications have been submitted (CUP 34, Map 232; CUP 36, Map 232) are proposed to be installed on the project site. This equipment will be both on-site and off-site. Regarding the off-site telecommunication infrastructure, the project proponent expects to share existing wired or wireless telecommunications facilities with the North Rosamond Solar project and the Willow Springs Solar project from a local service provider. However, in the event that these facilities are not sufficiently available in the site vicinity, the project proponent may install hard-wired (land-line) systems, underground or on overhead lines. When considering impacts resulting from the installation of any required telecommunications infrastructure, all impacts are

of a relatively short duration and would cease to occur when installation is complete. Any work that may affect services to the existing telecommunications lines would be coordinated with service providers. Therefore, construction of the project would not require or result in the relocation or construction of new or expanded telecommunication facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Operation

Water

Water demand during operation of the project would total approximately 20 acre-feet per year of non-potable water for toilets and hand washing facilities, fire protection, and potentially for PV solar panel washing. Similar to construction, the water supply for the project during operation would be supplied from one or more of the following options: 1) potential and/or existing well(s) on each individual facility site and/or well(s) which may be shared by the two facilities; 2) existing well(s) on the Willow Springs Solar project site. If water is supplied from the Willow Springs project site, it will be piped via temporary construction pipeline(s) or trucked; and 3) trucked Antelope Valley-East Kern Water Agency (AVEK) water collected at one of the nearby locations owned by AVEK. As discussed in the WSA (see Appendix L), after construction is complete, 4,852.44 acre-feet in 2021 and 5,581.88 acre-feet in 2022 (from the Antelope Valley Water Rights Schedule) will remain unused and available through the offsite water rights acquired. The amount of water available is therefore well above the projected demand for the operation of the project. Therefore, operation of the project would not require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Wastewater

As previously discussed, wastewater would be generated through restroom facilities inside of commercial coaches, restroom facilities inside of O&M Building(s), portable toilets, and portable handwashing facilities. The proposed project would require a septic system to be built to serve the two O&M Building(s) in order to accommodate wastewater disposal from restroom facilities for the estimated up to 20 full-time equivalent (FTE) personnel. In addition, portable toilets and hand washing facilities would be serviced by truck and any wastewater would be disposed of at an approved off-site disposal facility. The proposed septic system would treat sewage and would provide limited recharge to the nearby aquifer. This septic system would be constructed in accordance with Kern County Department of Public Health requirements. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed. Therefore, operation of the project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Stormwater Drainage

As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, the project site is located in a remote, rural region with no existing or planned stormwater infrastructure. There are no existing stormwater drainage systems on the project site, and no stormwater drainage systems are anticipated to be applicable as part of the project. The project would include limited grading such that off-site flow that enters the site would continue to flow through the site in a similar manner as it does currently. However, installation of the proposed facilities

discussed in Chapter 3, *Project Description*, of this EIR could alter existing on-site drainage patterns and flowpaths to some degree and could alter the way that stormwater from upgradient flows across the project site during major events. The project would be required to adhere to Kern County Public Works Department storm water requirements, which include measures to address stormwater controls on both management of runoff volume and water quality, including controlling erosion and protection of water quality of stormwater runoff. In addition, a large area of pervious surfaces would surround the proposed facilities that would continue to absorb runoff, thus allowing infiltration of the runoff produced by the new minor impervious surfaces. Further, the hydrologic study and final drainage plan required by Mitigation Measure MM 4.10-1 would detail any necessary design features required to properly control stormwater runoff, both onsite and offsite. The proposed project is not expected to exceed the capacity of existing storm water drainage systems in the area. Therefore, operation of the project is not anticipated to or result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Electric Power

Project operation would generate a combined total of approximately 250 MW of renewable electrical energy including associated energy storage systems, that would help to reduce or offset electricity on the state-wide utility grid. The existing infrastructure (i.e., the existing 230kV gen-tie line to the SCE Whirlwind Substation) has adequate capacity to accept the additional 250 MW that would be generated by the project without modifications. Operational energy consumption in the form of electricity would occur as a result of solar panel maintenance and the O&M Building(s) proposed on the two sites. However, electricity use would be offset by the power produced by the solar panels. In addition, the use of transportation fuel would be minimal and would be predominately associated with worker commute trips and occasional panel washing activities. As described in Section 4.6, *Energy*, of this DEIR, operation of the project would consume 477,771 kilowatt hours (kWh) of electricity per year, which is approximately 0.00055 percent of the total electricity consumption in the SCE service area in 2018. Total annual electricity generation is estimated to be 763,000 MWh, which more than offsets the energy consumed annually to operate the project. Therefore, operation of the project would not require or result in the relocation or construction of new or expanded electric power facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Natural Gas

The project will not use natural gas during the operation phase. Therefore, operation of the project would not require or result in the relocation or construction of new or expanded natural gas facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Telecommunications

Telecommunication equipment including underground and overhead telephone, fiber optics and wireless communications infrastructure such as cellular, satellite, or microwave towers (for which CUP applications have been submitted (CUP 34, Map 232; CUP 36, Map 232) would be installed at the project site. This equipment will be both on-site and off-site. Regarding off-site telecommunication infrastructure, the project proponent expects to share existing wired or wireless telecommunications facilities with the North Rosamond Solar project and the Willow Springs Solar project from a local service provider; in the event

that these facilities are not sufficiently available in the site vicinity, the project proponent may install hard-wired (land-line) systems, underground or on overhead lines. Additional fiber optic lines required for the operational phase of the project is not expected to result in additional demand such that the construction of off-site facilities would be required. Therefore, operation of the project would not require or result in the relocation or construction of new or expanded telecommunication facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.10-1.

Level of Significance after Mitigation

Impacts would be less than significant.

Impact 4.17-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

The majority of water use for the project would occur during the initial 12- to 24-month construction phase. Water would primarily be used for dust control during site preparation, trenching, and panel installation, and along access roads during the construction phase, and would also be required for temporary construction trailers and fire safety requirements. The estimated water use during the construction phase is approximately 600 acre-feet, as shown in **Table 4.17-1**, *Construction Phase Project Water Requirements*.

TABLE 4.17-1: CONSTRUCTION PHASE PROJECT WATER REQUIREMENTS

Site	Water Usage (in acre-feet) – Project Construction
Chaparral Facility	300
Rabbitbrush Facility	300
Project Total	**600**

SOURCE: AECOM, 2019.

The project's operational water consumption is expected to be approximately 20 acre-feet per year; 10 acre-feet for each facility. The principal uses will be for O&M Building(s) (toilets and hand washing facilities), fire protection, and potentially used for PV solar panel washing. Potable water would be imported for O&M staff consumption as necessary.

Table 4.17-2, *20-Year Annual Project Water Supply Requirements*, identifies the project's estimated annual water requirements over 20 years from the start of construction to satisfy the analysis time frame required under SB 610. **Table 4.17-2,** *20-Year Annual Project Water Supply Requirements*, also shows water use over five-year increments to facilitate comparisons with supply availability, which is provided in five-year increments. The total forecasted project water use over 20 years is 980 acre-feet.

TABLE 4.17-2: 20-YEAR ANNUAL PROJECT WATER SUPPLY REQUIREMENTS

Year	1	2	3	4	5	10[a]	15	20
Acre-Feet	600	20	20	20	20	100	100	100
Running Total[b]	**600**	**620**	**640**	**660**	**680**	**780**	**880**	**980**
5-Year Average	-	-	-	-	136	20	20	20

[a] 20 AFY for 5 years = 100 AF
[b] Total = running total of all water supply requirement from previous years
SOURCE: AECOM, 2019.

As discussed in the WSA (see Appendix L), the water supply for the project during construction and operation would be supplied from one or more of the following options: 1) Potential and/or existing well(s) on each individual facility site and/or well(s) which may be shared by the two facilities; 2) existing well(s) on the Willow Springs Solar project site. If water is supplied from the Willow Springs project site, it will be piped via temporary construction pipeline(s) or trucked; and 3) trucked Antelope Valley-East Kern Water Agency (AVEK) water collected at one of the nearby locations owned by AVEK. The water supply for the project would be provided by off-site water rights presently controlled by the project proponent and/or their affiliates and which were acquired from three sources: Rosamond Ranch, Landing, Inc. and a confidential water agreement.

Table 4.17-3, *Antelope Valley Water Rights Schedule for the Project*, provides the water rights schedule from 2016 through 2024.

TABLE 4.17-3: ANTELOPE VALLEY WATER RIGHTS SCHEDULE FOR THE AVEP SOLAR PROJECT

Year	Total Water Available (in acre-feet) including carry-over[a]
2016	1,334.34
2017	2,059.68
2018	2,794.12
2019	3,393.56
2020	4,123.00
2021	4,852.44
2022	5,581.88
2023	6,311.32
2024	7,040.76

[a] Total water available (in acre-feet) includes annual water rights and annual amount permitted to carry over. Carry over production rights have not yet been established by the Watermaster for the Antelope Valley. As such, the carry over rights are based on the pre-rampdown production rights.
SOURCE: AECOM, 2019.

As discussed above, construction of the project would require approximately 600 acre-feet of water. The total water available through offsite water rights acquired is expected to be 4,123 acre-feet in 2020, as shown in **Table 4.17-3,** *Antelope Valley Water Rights Schedule for the Project*. In addition, after construction is complete, 4,852.44 acre-feet in 2021 and 5,581.88 acre-feet in 2022 (from the Antelope Valley Water Rights Schedule) will remain unused and available, as shown in **Table 4.17-3,** *Antelope Valley Water Rights Schedule for the Project*. The amount of water available for use by the project is above the project demand for the project operation, which has an annual demand of 20 acre-feet per year. As such, project construction and operation water demands would be met by available groundwater sources. As noted in the WSA, groundwater rights for the project were allocated by the Antelope Valley Watermaster use for construction and operation over the life of the project. Therefore, the project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.17-3: The project would result in a determination by the waste water treatment provider which may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

The project is not expected to generate a significant amount of wastewater. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed for operations. Wastewater would be generated through restroom facilities inside of commercial coaches, restroom facilities inside of O&M Building(s), portable toilets, and portable handwashing facilities. The restroom facilities inside of commercial coaches and the restroom facilities inside of O&M Building(s) would be served by septic system. Portable toilets and portable hand washing facilities would be serviced by truck (not served by septic system) and any wastewater would be disposed of at an approved off-site disposal facility. Therefore, wastewater generated would be negligible and would not exceed wastewater treatment capacity of any treatment providers. Impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.17-4: The project would generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Construction

It is anticipated the project would not generate substantial amounts of non-recyclable waste during construction. The project site is currently undeveloped (with the exception of two residences and residential accessory structures). The residence on the Chaparral facility is inhabited, the residence on the Rabbitbrush facility is uninhabited. Both existing residences and residential accessory structures are proposed to be demolished and removed, or to remain and be repurposed as O&M Building(s) (for the Facility respective to their location) in compliance with applicable Kern County Building code requirements. Materials will be recycled where feasible, with remaining disposal in landfills in compliance with all applicable regulations. In addition, materials brought to the project site would be used to construct facilities, and few residual materials are expected. Solar modules would be delivered to the site via shipping containers packaged via use of wood and cardboard materials. The shipping container materials for module deliveries would be recycled and are not anticipated to generate non-recyclable waste. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. Any hazardous waste generated during construction would be disposed of at an approved facility.

Non-hazardous construction refuse and solid waste would either be collected and recycled, or disposed of at a local landfill. The Mojave-Rosamond Landfill (approximately 15.25 miles northeast of the project site) is the closest landfill to the project site and, therefore, would be the most likely recipient of project site solid waste. The Mojave-Rosamond Landfill has a remaining capacity of 76,310,297 cubic yards with an anticipated closure year of 2123 (CalRecycle, 2019a). The Mojave-Rosamond Landfill is a Class III landfill and, therefore, accept wastes from construction and demolition as well as industrial sources, but does not accept hazardous waste, hot ashes, and liquids of any kind. In addition, with the implementation of Mitigation Measure MM 4.17-1, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during construction. Therefore, construction impacts of the project on existing landfills are anticipated to be less than significant.

Operation

During operation, little to no solid waste would be generated. The O&M Building(s) would include up to 20 FTE personnel, and the only waste generated onsite would result from office and maintenance activities. The Tehachapi Sanitary Landfill has a planned cease operation date of 2020, but the Mojave-Rosamond Landfill would continue to operate through 2123 and is expected to serve the project throughout its operational phase. In addition, with the implementation of Mitigation Measure MM 4.17-1, as discussed below, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste generated during project operation, thereby further reducing solid waste generated during operation. Therefore, impacts related to landfill capacity would be less than significant with the implementation of Mitigation Measure MM 4.17-1.

Decommissioning

Solar PV panels have a lifespan of over 30 years, after which the land could be converted to other uses in accordance with applicable land use regulations in effect at that time. Solar PV panels contain valuable materials that would likely be recycled at the end of their useful life. Solar panel manufacturers have identified that approximately ninety percent of materials in solar panel modules can be recycled, where feasible. In the case of both crystalline silicon and thin film CdTe PV technology, a national PV module recycling network has been established by the U.S. Solar Energy Industry Association (SEIA) for providing module collection and recycling services (see https://www.seia.org/initiatives/seia-national-pv-recycling-program). Decommissioning of the collection lines would not generate substantial amounts of solid waste. As stated above, the Mojave-Rosamond Landfill is expected to be in operation through 2123 and is anticipated to serve as a solid waste disposal location during project decommissioning. Per Mitigation Measure MM 4.17-1, a collection and recycling program would be implemented during decommissioning to recycle project components and minimize disposal of project components in landfills. Following decommissioning, the project site would be returned to predevelopment conditions or converted to other uses in accordance with applicable land use regulations in effect at the time, and would not generate waste. Therefore, impacts related to landfill capacity would be less than significant during decommissioning with the implementation of Mitigation Measure MM 4.17-1.

Mitigation Measures

MM 4.17-1: During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible. The provisions listed below shall apply to the project.

a. An onsite Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Maintenance and Decommissioning, Trash Abatement and Pest Management Program.

b. The Recycling Coordinator shall facilitate recycling of all construction waste through coordination with contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes.

c. The onsite Recycling Coordinator shall also be responsible for ensuring wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal

d. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits.

e. The project proponent/operator shall provide a storage area for recyclable materials within the fenced project area that is clearly identified for recycling. This area shall be maintained on the site during construction, operations and decommissioning. A site plan showing the recycling storage area shall be submitted prior to the issuance of any grading or building permit for the site.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.17-1, impacts would be less than significant.

Impact 4.17-5: 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 and operation. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. AB 341 requires Kern County to attain a waste diversion goals of 75 percent by 2020 through reduction, recycling, or composting. In addition, as part of compliance with CALGreen requirements, Kern County implements the following construction waste diversion requirements:

- Submittal of a Construction Waste Management Plan;
- Recycle and/or reuse a minimum 65 percent C&D waste; and
- Recycle or reuse 100 percent of tree stumps, rocks, and associated vegetation and soils resulting from land clearing.

Furthermore, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. Implementation of Mitigation Measure MM 4.17-1 would ensure compliance with waste diversion and recycling requirements by requiring recycling during construction, operation, and decommissioning of the project. The project would be required to comply with all federal, State, and local statutes and regulations related to the handling and disposal of solid waste. Therefore, implementation of the project would result in less-than-significant impacts regarding compliance with management and reduction statutes and regulations related to solid waste.

Mitigation Measures

Implement Mitigation Measure MM 4.17-1.

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, electricity, telecommunications, and solid waste disposal, includes the projects that would be relying on the same facilities and infrastructure. Impacts of the project would be cumulatively considerable if the incremental effects of the project when combined with other past, present, or reasonably foreseeable projects (listed in **Table 3-4**, *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 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 project would place few demands on water, wastewater, stormwater drainage, electricity telecommunications, and solid waste disposal (during construction and operation). As described above, the project would place no demands on natural gas.

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 or truck in their water supply (similar to the project). In response to the recent adjudication of the Antelope Valley Groundwater Basin, all projects relying on water from Antelope Valley Groundwater Basin would be required to obtain water from water purveyors that have existing water rights within the Antelope Valley Groundwater 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 or infrastructure and is not expected to generate a significant amount of wastewater. Wastewater produced during construction (which is not disposed of via septic system) would be collected in portable toilet facilities and portable hand wishing facilities, and disposed of at an approved facility. A septic system would be built at the O&M Building(s) to supply non-potable water for the 20 FTE personnel that would have access to the facilities. Other planned renewable energy projects may or may not propose an O&M Building(s) that would require the installation of a septic system. Therefore, the project would not have the potential, when combined with impacts from past, present, or reasonably foreseeable projects, to result in a cumulative impact to a regional wastewater treatment facility or the capacity of said facilities.

Stormwater Drainage

As described above, the project site is located in a remote, rural region with no existing or planned stormwater infrastructure, even though there are existing residences on the project site. The project would be required to adhere to Kern County Public Works Department storm water requirements, which include measures to address stormwater controls on both management of runoff volume and water quality, including controlling erosion. In addition, a large amount of pervious surfaces would surround the proposed facilities that would continue to absorb runoff thus allowing infiltration of the runoff produced by the new minor impervious surfaces. Further, the hydrologic study and final drainage plan required by Mitigation Measure MM 4.10-1 would detail any necessary design features required to properly control stormwater runoff onsite. Cumulative projects would also be required to prepare a hydrologic study and final drainage plan that would help avoid substantial increases of stormwater generated onsite by their respective ground disturbance. Depending on the findings of their respective hydrologic studies and final drainage plans, these projects may need to construct stormwater control structures onsite to reduce the potential for increased stormwater runoff. Other projects in the vicinity would be required to offset substantial increases in stormwater as well per County requirements and would also be required to implement best management

practices (BMPs), as well as comply with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit and their respective Storm Water Pollution Prevention Plan (SWPPP) as applicable. Therefore, the project would not substantially contribute to a cumulative impact on stormwater drainage facilities.

Electric Power

Electricity is not expected to be consumed in large quantity during project construction, as construction equipment and vehicles are not electric (but rather diesel- or gas-powered). Each facility would have a collection system connecting PV modules to the applicable existing substation which includes a combination of underground, aboveground cable trays and overhead (poles or H-Frame structures) DC and AC electrical communication cables. As described in Section 4.6, *Energy*, of this DEIR, operation of the project would consume 477,771 kilowatt hours (kWh) per year of electricity, which is approximately 0.0008 percent of the total electricity consumption in the SCE service area in 2018. Total annual electricity generation is estimated to be 763,000 MWh, which more than offsets the energy consumed annually to operate the project. This project in combination with other cumulative solar projects would help to reduce or offset electricity on the state-wide utility grid and therefore provide a beneficial cumulative impact on electrical demand and facilities.

Natural Gas

The project will not use natural gas during the construction, operational, and/or decommissioning phase. Therefore, the project would not contribute to a cumulatively considerable impact related to natural gas demand and facilities.

Telecommunications

The project in combination with cumulative projects would increase demand on telecommunication facilities. However, demand associated with energy projects and other cumulative development would be minimal and is expected to be within the planning forecasts of the affected telecommunications provider. Therefore, cumulative impacts related to telecommunications facilities would be less than significant.

Solid Waste

As previously discussed, there are two existing residences within the project boundaries (only one of these residences is inhabited). Both existing residences and all residential accessory structures are proposed to be demolished and removed, or to remain and be repurposed as O&M Building(s) (for the Facility respective to their location) in compliance with applicable Kern County Building code requirements. Demolition and construction materials will be recycled where feasible, with remaining disposal in landfills in compliance with all applicable regulations. In addition, 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. In addition, the project would generate a minimal amount of solid waste during operation and is not expected to significantly impact Kern County landfills. Although the Tehachapi Landfill is expected to cease operation in 2020 (i.e., prior to the anticipated construction commencement date for the proposed project), the Mojave-Rosamond Landfill is expected to operate until 2123 and could accommodate solid waste generated during construction, operation

and decommissioning of the proposed project. However, generation of waste from cumulative projects, including other solar and wind projects, could result in a cumulative impact. To ensure that the 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 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.

Conclusion

In conclusion, the project would not have a significant impact on public utilities. The incremental effects of the 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 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

Implement Mitigation Measures MM 4.10-1 and MM 4.17-1.

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 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 the project plans, California Department of Forestry and Fire Protection (CAL FIRE), Kern County Fire Hazards Severity Zone (FHSZ) Maps and the *Biological Resources Technical Report* (West, 2020) provided in Appendix E-1 of this EIR.

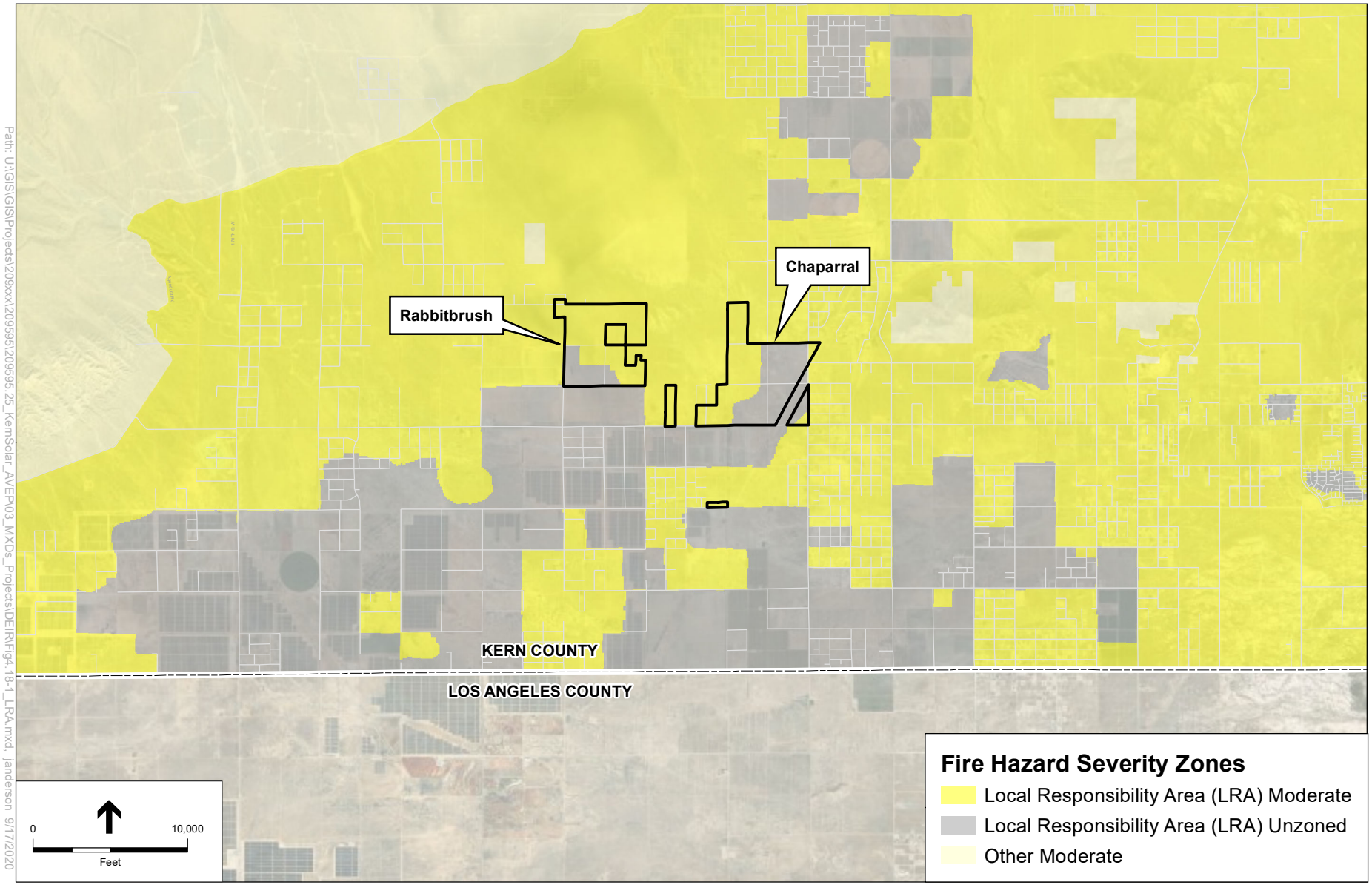
4.18.2 Environmental Setting

Site Characteristics and Fire Environment

The project site primarily consists of sparse desert vegetation with the exception of two residences and residential accessory structures. 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 projects, and meteorological towers. The California Department of Forestry and Fire Protection (CAL FIRE) maps Fire Hazard Severity Zones (FHSZs), based on factors such as fuel, slope, and fire weather to identify the degree of fire hazard throughout California (i.e., moderate, high, or very high). While FHSZs do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern. According to the CAL FIRE, Kern County Fire Hazards Severity Zone Maps for the Local Responsible Areas, a portion of the project site is classified as Local Responsibility Area (LRA) Moderate, and a portion of the project site is classified as LRA Unzoned (CAL FIRE, 2020a) (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 (CAL FIRE, 2020a). Moderate zones are typically wildland supporting areas of low fire frequency and relatively modest fire behavior. The project site is not within a Federal Responsibility Area (FRA) or State Responsibility Area (SRA). The area approximately 6 miles to the northwest of the project site is categorized as SRA Moderate (see **Figure 4.18-2**, *Fire Hazard Severity Zones for Federal and State Responsibility Areas*).

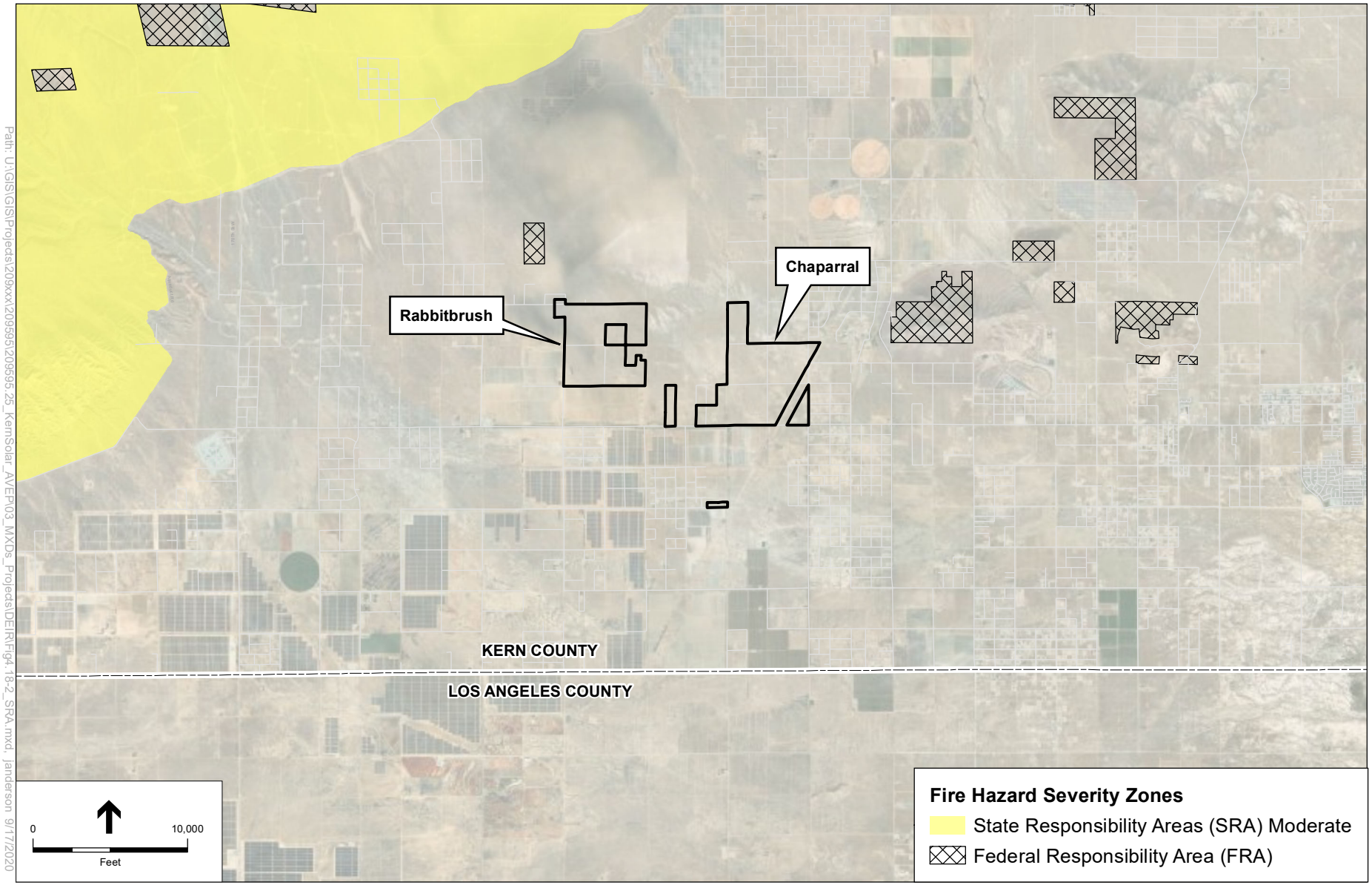
Fire History

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 Map that shows fires back through 2013 (CAL FIRE, 2019a) and CAL FIRE's Fire and Resource Assessment Program (FRAP) Fire Perimeters: Wildfires 1950-2018 map (CAL FIRE, 2019b). Based on a review of these maps, no fires in the recorded history have burned across the project site.



Path: U:\GIS\GIS\Projects\209xxx\209595\209595.25_KernSolar_AVEP\03_MXDs_Projects\DEIR\Fig4.18-1_LRA.mxd, janderson 9/17/2020

FIGURE 4.18-1: FIRE HAZARD SEVERITY ZONES FOR LOCAL RESPONSIBILITY AREAS



Path: U:\GIS\GIS\Projects\209xxx\209595\209595.25_KernSolar_AVEP\03_MXDs_Projects\DEIR\Fig4.18-2_SRA.mxd, janderson 9/17/2020

FIGURE 4.18-2: FIRE HAZARD SEVERITY ZONES FOR FEDERAL AND STATE RESPONSIBILITY AREAS

Vegetation (Fuels)

The Mojave Creosote Bush Scrub (creosote bush scrub) community dominates most of the proposed project sites. This community typically occurs on well-drained soils in alluvial fans, bajadas, and upland slopes. Growth occurs during spring (or rarely in summer or fall) if rainfall is sufficient. This is one of the most widely distributed desert plant communities in the Mojave Desert, occurring from the desert floor up to approximately 3,500 feet in elevation and extending into northwestern Arizona and southern Utah. Scattered, widely spaced Joshua trees occur throughout portions of the creosote bush scrub communities present within Rabbitbrush Solar and Chaparral Solar; however, they do not occur at a density high enough to be considered a distinct woodland community.

A description of the vegetation communities and land cover types, along with applicable acreage of each, are provided in **Table 4.18-1,** *Vegetation Community or Land Cover Type Present Within the Project Site*.

TABLE 4.18-1: VEGETATION COMMUNITY OR LAND COVER TYPE PRESENT WITHIN THE PROJECT SITE

Vegetation Community or Land Cover Type	Chaparral Solar Acreage	Rabbitbrush Solar Acreage	Total Acreage
Active and fallow agriculture	0	0	0
Alkaline mixed scrub	145	25	170
California annual and perennial grassland	346	24	370
Creosote bush scrub	179	392	571
Developed	6	16	22
Rabbitbrush scrub	98	0	98
White bursage scrub	0	175	175
Total	**774**	**632**	**1,406**

SOURCE: West, Inc. 2019.

4.18.3 Regulatory Setting

Federal

There are no applicable federal regulations for this issue area.

State

2019 California Fire Code

The 2019 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions

of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. Chapter 6 (Building Services and Systems) of the Code focuses on building systems and services as they relate to potential safety hazards and when and how they should be installed. Building services and systems are addressed and 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 (for inhabited structures), fire service features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

2019 California Building Code, Chapter 7A

Chapter 7 of the 2019 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 important for soil stability, may be maintained; as may single specimens of trees or other vegetation that is maintained so as to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. Additionally, the Public Resources Code outlines infraction fees, certification, and compliance procedures applicable with state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code.

Local

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 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.

Willow Springs Specific Plan

The project site is subject to the provisions of the Willow Springs Specific Plan. The Willow Springs Specific Plan was adopted in 1992 and amended in April 2008 and contains goals, policies, and standards that are compatible with those in the Kern County General Plan, but are unique to the specific needs of the Willow Springs Area. The wildfire-related policies and measures contained in the Willow Springs Specific Plan that are applicable to the project are outlined below (Kern County, 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included.

General Provision

(1) Fire flow provisions and on-site fire protection standards (i.e., sprinklers/water storage) shall be in compliance with minimum standards provided by the Kern County Fire Department.

Kern County Fire Code

Chapter 17.32 of the County Municipal Code details the Kern County Fire Code, which is an adoption of the California Code of Regulations, Title 24, Part 9, 2019 edition of the California Fire Code with some amendments.

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 under the KCFD Wildland Fire Management Plan (KCFD, 2009).

Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2019 California Fire Code and the 2018 International Fire Code with some amendments. The purpose

of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees therefore (Kern County, 2019a).

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 area. 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, the hosting of 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 and not within a SRA (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, 2019b).

4.18.4 Impacts and Mitigation Measures

Methodology

Wildfire impacts are considered on the basis of: 1) offsite wildland fires that could result due to the proposed project, and 2) onsite generated combustion that could affect surrounding areas. The project's potential impacts associated with wildfires have been evaluated using a variety of resources, including CAL FIRE maps showing FHSZs, FRAP, and fire history, vegetation data from the Biological Resources Technical

Report (West Inc., 2019), Phase 1 Cultural Resources Survey Report (ASM Affiliates, 2020), Preliminary Drainage Study (Wallace Group 2019), project location maps, and project characteristics. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

Thresholds of Significance

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in Appendix G of the *CEQA Guidelines*, to determine if a project could potentially have a significant impact with respect to Wildfires.

A project would have a significant impact with respect to wildfires if it would be located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and if the project would:

a. Substantially impair an adopted emergency response plan or emergency evacuation plan;

b. Due to slope, prevailing winds, or other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment;

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Project Impacts

Impact 4.18-1: The project would substantially impair an adopted emergency response plan or emergency evacuation plan.

The project site is not classified as being within a high fire hazard severity zone and is not anticipated to physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site. The project site is located in a rural, sparsely developed area with limited population. The project site is not located along an identified emergency evacuation route and is not identified in any adopted emergency evacuation plan. Also in compliance with applicable Fire Code and Building Code requirements, construction managers and personnel would be trained in fire prevention and emergency response. Fire suppression equipment specific to construction would be maintained on site. Additionally, project construction would comply with applicable existing codes and ordinances related to the maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials. Therefore, the project would not conflict with the implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.18-2: The project would, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Slope and wind speed can influence the spread of fires. Upslope topography eventually increases the spread rate of the fire in all fuel beds over flat conditions (International Journal of Wildland Fire 2002, 2010). As described in Chapter 3, *Project Description*, of the EIR, elevations across the project site range from approximately 2,700 feet above mean sea level (msl) in the northwest portion of the site to approximately 2,457 feet above msl in the southeast portion of the site; thus, the site's topography has a gentle slope to the southeast. The proposed project would require up to 20 full-time equivalent (FTE) personnel (or personnel hours totaling 20 FTE positions) during operation and maintenance of the project. Furthermore, a portion of the project site is classified as LRA Moderate and a portion of the project site is classified as LRA Unzoned; the entirety of the project site is outside of areas identified by CAL FIRE as having substantial or very high risk (CAL FIRE, 2020a). Thus, the potential for wildfire on the project site is considered low. Additionally, project construction would comply with applicable existing codes and ordinances related to the maintenance of mechanical equipment, handling and storage of flammable materials, and cleanup of spills of flammable materials. Given the moderate potential for fire and the lack of permanent occupants, the project is not anticipated to expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire due to slope, prevailing winds and other factors. Impacts would be less than significant.

Mitigation Measures

No mitigation would be required.

Level of Significance

Impacts would be less than significant.

Impact 4.18-3: The project would require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

The proposed project will interconnect to the SCE Whirlwind Substation as described in Chapter 3, *Project Description*, of this EIR. The selected collection line route would consist of the utility poles, cabling, trenches, and a corresponding dirt maintenance road. The project will share off-site substations and gen-tie lines associated with the previously permitted Willow Springs Solar and North Rosamond Solar Projects. Project interconnection will require SCE to install new interconnection-related components at the Whirlwind Substation such as additional control equipment. As proposed, the aforementioned components would occupy a maximum area of 100 square feet and will be attached to existing racks (i.e., not ground-mounted).

Additionally, new project site access roads would be installed between the solar arrays, as well as a 20-foot-wide internal maintenance roads and a minimum 20-foot-wide perimeter road around the solar arrays, which would be cleared and compacted for equipment and emergency vehicle travel and access to the solar array blocks. These project site access roads would remain in place for ongoing operations and maintenance activities after construction is completed. Further, the proposed project could also require improved unpaved roads to serve as access roads from the existing road network to the project. All new roads would comply with development requirements for emergency access, and therefore, would not exacerbate fire risk that could result in temporary or ongoing impacts to the environment.

Most fires in the desert are caused by lightning or vehicles. The installation of the electrical collector system and internal/perimeter dirt maintenance roads would not be placed within a high fire hazard zone, and the vegetation would be cleared; therefore, the proposed project 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 and, thus, impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.14-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts will be less than significant.

Impact 4.18-4: The project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope 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. The project would require implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include erosion and sediment control BMPs during construction, thereby reducing the potential of erosion and siltation during construction and would control potential flooding events that could occur during construction. Additionally, the proposed new impervious surfaces would generate additional stormwater runoff onsite, albeit in minor quantities compared to existing conditions. However, this could exacerbate potential erosion and sedimentation onsite or downstream. As discussed in Section 4.10, *Hydrology and Water Quality*, Kern County requires development of a drainage plan with the site development grading permit, which will manage stormwater and reduce the risk for offsite impacts due to erosion and impacts on water quality, as implemented by Mitigation Measure MM 4.10-1. Design measures are intended to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding on or off site. One element of the drainage plan is potential retention basin(s) and/or detention ponds(s) to manage facility stormwater. The majority of the project development would be on mowed lands; however, in some limited areas gravel pads and compacted dirt roadways would be used and may act similar

to impervious surfaces and encourage sheet flow. The amount of new impervious surface would be minimal in comparison to the overall project area and would not substantially increase the rate or amount of surface runoff. The project proponent may potentially construct retention pond(s) and/or detention pond(s) to manage stormwater due to new impervious surface in areas with compacted soil such as roads, solar array areas, battery storage containers, the substation and the O&M Building(s). Implementation of Mitigation Measure MM 4.10-1 would minimize potential increases in runoff and ensure that design measures are implemented to minimize erosion, sedimentation, and flooding onsite and offsite.

A majority of the offsite flow that enters the project site would continue to sheet flow across the site with no impacts from development of the project. Furthermore, the soil types onsite have high infiltration rates and low runoff potential when thoroughly wet.

The project site is located on a gentle southeast-facing slope below the Tehachapi Mountains on an alluvial fan. Based on the fire history immediately surrounding the site, moderate zone designation, soil types, and surface hydrology, there is a low potential for the project site to be at risk of post-fire slope instability or drainage changes.

While the project would introduce new structures to the project site, the structures would not be placed in a highly flammable landscape. Furthermore, with the implementation of Mitigation Measure 4.10-1, any potential impacts from runoff and erosion would be minimized. Therefore, the project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM 4.10-1.

Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

Cumulative Setting, Impacts, and Mitigation Measures

The Antelope Valley region represents the geographic scope for wildfire impacts. This geographic scope was selected because the land within the region possesses relatively similar features and 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. In addition, according to wind speed measurements in the project area recorded by the California Air Resources Board, this region experiences regularly moderate to strong prevailing winds (defined as greater than 12 miles per hour) up to 41.4 percent of the time, including winds over 20 mph occurring up to 18 percent of the time (CARB, 2020). As shown in Chapter 3, *Project Description*, **Table 3-4**, *Cumulative Project List*, there are 145 projects in the area including several utility-scale solar and wind energy production facilities. These have the potential to result in cumulative impacts to wildfire when considered together with the project.

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 (or similar codes/requirements in accordance with the applicable jurisdiction within Los Angeles County) 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 a less than significant 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 sis subject to high wind speeds, and is a rural area with 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 is subject to high wind speeds, and is a rural area with 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 (or the applicable jurisdiction within Los Angeles County) for land use and zoning consistency and compliance with applicable requirements, and 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 and maintenance of a collector line and access roads 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, and submitted to the Kern County Fire Department for review and approval. Nevertheless, given the location is subject to high wind speeds, and is a rural area with 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 slope 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 (or those of the applicable jurisdiction within Los Angeles County), 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 slope 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 is subject to high wind speeds, and is a rural area with 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, 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 the environmental document. Comments received during scoping have been considered in the process of identifying issue areas that should receive attention in the EIR. The EIR's contents were established based on the Notice of Preparation/Initial Study (NOP/IS) located in Appendix A of this EIR that was prepared in accordance with the *CEQA Guidelines* and in consideration of public and agency input received during the scoping process.

Issues that were found to have no impact or less-than-significant impacts do not need to be addressed further in this EIR. Based on the findings of the NOP/IS and the results of scoping, it was determined that the project would have no impact with regard to the following impact thresholds:

- Population and Housing
- Recreation

The project proponents filed land use applications for the project which were subsequently deemed complete by the County per a letter dated November 15, 2017. In the original applications, the project proponents had proposed the development of three solar facilities, which in addition to the Chaparral Solar Facility and Rabbitbrush Solar Facility, included a third solar generating facility and energy storage system located on approximately 721 acres of land and referred to as the Tumbleweed Solar Facility.

The County circulated the Initial Study/Notice of Preparation (IS/NOP) for the project in between September 10, 2019 and October 4, 2019, which included the Tumbleweed Solar Facility. Subsequent to circulation of the IS/NOP, the project proponents undertook a redesign process for the project that resulted in:

- The removal of the Tumbleweed Solar Facility and withdrawal of the conditional use permit application and associated land use applications for that facility. This revision reduced the proposed project energy output from 375 MW to 250 MW and decreased the land area from approximately 2,127 acres to 1,406 acres as reflected in this EIR.
- The addition of a 10-acre parcel to the Chaparral Solar Facility (APN 359-011-36), located at the northwest corner of Holiday Avenue and 110th Street West. This resulted in the acreage of the Chaparral Solar Facility being increased from 764 acres to 774 acres.

The NOP/IS determined that the project would require an average of 688 daily on-site construction workers and approximately 1,455 construction workers at the peak of construction. With the removal of the Tumbleweed Solar Facility, the estimated number of peak workers for project construction was reduced to 946, while the average workers is expected to remain the same. The entire construction process is estimated to take 12 to 24 months. Construction workers are expected to travel to the site from various local

communities and locations throughout Southern California, and the number of workers expected to relocate to the surrounding area is not expected to be substantial. If temporary housing should be necessary, it is expected that accommodations would be available in the nearby communities of Mojave, Rosamond, Lancaster, or other local communities and cities. Therefore, the project is not anticipated to directly or indirectly induce the development of any new housing or businesses. Furthermore, the NOP/IS determined that, during the operational phase, the project would have up to 30 full-time equivalent (FTE) personnel, subsequently reduced to 20 FTE personnel with the removal of the Tumbleweed Facility, (or personnel hours totaling 20 FTE positions, i.e., an average of 800 personnel hours per week), who would commute to the site for operational and maintenance activities. These employees would likely be drawn from the local labor force and would commute from their permanent residences to the project site. However, even if the maintenance employees were hired from out of the area and had to relocate to eastern Kern County, the minor addition of persons to this area would not result in a substantial increase in population in the area. Consequently, this would represent a minor increase in the number of users at local recreational facilities. As a result, the project would not directly or indirectly induce the development of any new housing or businesses, and there would not be a detectable increase in the use of parks or other recreational facilities. No impacts to population and housing or recreation would occur and no further analysis is warranted.

For all other resource areas, this EIR contains a comprehensive analysis of potential environmental impacts.

After further study and environmental review, as provided in this EIR, it was determined that project-level impacts in the following areas would be less than significant or could be reduced to less-than-significant levels with mitigation measures; however, these resource areas are evaluated in this EIR for their potential significance:

- Agriculture and Forest Resources;
- 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 and Traffic;
- Tribal Cultural Resources;
- Utilities and Service Systems; and
- Wildfires.

5.2 Significant Environmental Effects that Cannot Be Avoided

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

After further study and environmental review, as provided in this EIR, it was determined that project-level and cumulative impacts in the following areas would be significant and unavoidable for the project, even with the incorporation of reasonable mitigation measures, which would attempt to reduce impacts to the greatest extent feasible.

As shown in **Table 5-1**, *Summary of Significant and Unavoidable Impacts of the Project*, impacts in the following areas would be significant and unavoidable, even with the incorporation of feasible mitigation measures that attempt to reduce impacts to the extent feasible.

TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

Resources	Project Impacts	Cumulative Impacts
Aesthetics	Implementation of the project would result in potentially significant visual impacts to the existing visual quality or character of the site and surrounding area. Mitigation Measures MM 4.1-1 through MM 4.1-4 would be incorporated to reduce visual impacts that would occur from the collection of debris along the site boundary, would limit vegetation removal, and would plant native vegetation. However, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped desert landscape character of the project site, impacts to visual resources would remain **significant and unavoidable**.	The project would have cumulatively significant and unavoidable aesthetic impacts related to visual character after implementation of mitigation. Although implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7 would reduce the adverse visual changes experienced at individual viewpoints, there are no feasible mitigation measures that would allow for the preservation of the existing visual character of the area. The conversion of approximately 1406 acres of privately owned land to a solar energy production facility is considered a **significant and unavoidable** cumulative impact. As it relates to impacts associated with light and glare, the project would implement Mitigation Measures MM 4.1-5 through MM 4.1-7, that would reduce the project's impacts. However, given the number of proposed cumulative projects directly adjacent to and within proximity of the project and the conversion of thousands of acres of land in a presently rural area, even with implementation of mitigation, the project and cumulative projects combined would result in **significant and unavoidable** cumulative impacts related to light and glare.
Air Quality	There would be no significant and unavoidable project impacts.	There are several alternative energy (wind and solar) projects being developed within the eastern Kern geographical area. From a site-specific, project-level operational review, these projects are required to comply with all rules and regulations of the Eastern Kern Air Pollution Control District. Impacts associated with operation of the proposed project are generally considered less than significant. However, given the total number of development proposals within the region, even with the implementation of Mitigation Measures MM 4.3-1 through MM 4.3-3, cumulative temporary construction impacts are considered **significant and unavoidable**.

TABLE 5-1: SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

Resources	Project Impacts	Cumulative Impacts
Biological Resources	There would be no significant and unavoidable project impacts.	As development increases within the undeveloped areas of Kern County, impacts to biological resources within the region are increasing on a cumulative level. When considered with the number of present and reasonably foreseeable future development projects in the Antelope Valley, the project would result in a significant and unavoidable cumulative loss of habitat for special-status species, even with the implementation of project-specific Mitigation Measures MM 4.4-1 through MM 4.4-12. The loss of such habitat for special-status species that may utilize habitat on the project site would result in a **significant and unavoidable** cumulative impact.
Wildfire	There would be no significant and unavoidable project impacts.	Given the location in a high wind rural area with limited infrastructure, the project and related projects would have the potential to result in cumulatively **significant and unavoidable** wildfire impacts related to: the impairment of an adopted emergency response plan; the exposure of project occupants to pollutant concentrations from a wildfire; the installation or maintenance of associated infrastructure; and the exposure of people or structure to significant risks as a result of runoff, post-fire slope instability, or drainage changes, even after implementation of mitigation measures.

5.3 Irreversible Impacts

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

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

5.4 Growth Inducement

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

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

Growth inducement can be a result of new development that requires an increase in employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the project would not induce substantial growth. Construction staff not drawn from the local labor pool would stay in any of the local hotels in local communities. During the operational phase, the project would have up to 20 FTE personnel (or personnel hours totaling 20 FTE positions, i.e., an average of 800 personnel hours per week), who would commute to the site for operational and maintenance activities. It is anticipated that the construction and operational 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.

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

In *Kerncrest Audubon Society v. Los Angeles Department of Water and Power*, the analysis of growth-inducing effects contained in the EIR for the Pine Tree Wind Development Project was challenged. Plaintiffs argued that the discussion was too cursory to provide adequate information about how additional electricity generated by the project would sustain further growth in the Los Angeles area. The court held that the additional electricity that the project would produce was intended to meet the current forecast of growth in the Los Angeles area. As such, the wind development project would not cause growth, and so it was not reasonable to require a detailed analysis of growth-inducing impacts. In addition, EIRs for similar energy projects have contained similarly detailed analyses of growth-inducing impacts. Their conclusions that increasing the energy supply would not create growth has been upheld, because: (1) the additional energy would be used to ease the burdens of meeting existing energy demands within and beyond the area of the project; (2) the energy would be used to support already-projected growth; or (3) the factors affecting growth are so multifarious that any potential connection between additional energy production and growth would necessarily be too speculative and tenuous to merit extensive analysis. Thus, as has been upheld in the courts, this level of analysis provided in this EIR is adequate to inform the public and decision makers of the growth-inducing impacts of the project.

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Chapter 6
Alternatives

6.1 Introduction

The California Environmental Quality Act (CEQA) requires that an EIR describe a range of reasonable alternatives to the project or to the location of the project that could feasibly avoid or lessen any significant environmental impacts of the project while attaining most of the project's basic objectives. An EIR also must compare and evaluate the environmental effects and comparative merits of the alternatives. This chapter describes alternatives considered but eliminated from further consideration (including the reasons for elimination), and compares the environmental impacts of several alternatives retained with those of the project.

The following are key provisions of the *CEQA Guidelines* (Section 15126.6):

- The discussion of alternatives shall focus on alternatives to the project or its site that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede, to some degree, the attainment of the project objectives, or would be more costly.
- The No Project Alternative shall be evaluated, along with its impacts. The no-project analysis shall discuss the existing conditions at the time the notice of preparation was published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a "rule of reason." Therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner that fosters meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in *CEQA Guidelines* Section 15126.6(f)(1)) are environmental impacts, site suitability, economic viability, social and political acceptability, technological capacity, availability of infrastructure, General Plan consistency, specific plan consistency, regulatory limitations, jurisdictional boundaries, and whether the project proponent could reasonably acquire, control, or otherwise have access to an alternative site. If an alternative has effects that cannot be reasonably identified, if its implementation is remote or speculative, and if it would not achieve the basic project objectives, it need not be considered in the EIR.

6.1.1 Significant Impacts of the Project after Mitigation

Implementation of the proposed project has the potential to have significant adverse effects on:

- Aesthetics (project and cumulative)
- Air quality (cumulative – temporary construction only)
- Biological resources (cumulative only)
- Wildfire (cumulative only)

Even with the mitigation measures described in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR, impacts in these issue areas would be significant and unavoidable. Therefore, per the *CEQA Guidelines*, this 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 project would substantially change the existing visual character of the landscape as viewed from sensitive receptors for the life of the project. The project facilities would add cultural modifications to the project site's landscape from certain viewpoints. Operation of solar power generation and ESS facilities of this size would introduce new infrastructure and other anthropogenic features; alter the existing visual character of the landscape from one that is rural to more industrial in nature; be seen by viewers of high, moderately high, and moderate sensitivity; and reduce existing scenic quality through the intrusion of human-made elements on land that is currently largely undeveloped. Native vegetation would be left in place around the project site where feasible, allowing for a natural screening of project components, and the proposed project would incorporate applicable setback requirements for the operations and maintenance (O&M) building and other project features from the project property lines. Implementation of Mitigation Measures MM 4.1-1 through MM 4.1-4 would help to reduce visual impacts associated with the proposed project by limiting vegetation removal, planting native vegetation, providing privacy fencing, reducing the visibility of project features, and ensuring that the project site is kept free of debris and trash. Nevertheless, even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-4, project level impacts to visual character and quality would remain significant and unavoidable.

Additionally, while other projects in the region are also required to implement various mitigation measures to reduce impacts associated with visual character and quality, the conversion of thousands of acres in a presently rural area to solar and wind energy production uses cannot be mitigated to a degree that impacts are no longer significant. Therefore, even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-7, the project's contribution to significant impacts associated with visual character and quality in the Antelope Valley would be cumulatively significant and unavoidable.

Air Quality

With project implementation, long-term increases in operational emissions of primary concern within the region (i.e., ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$) would be minimal and would not exceed applicable significance thresholds. Construction and decommissioning of the project would result in temporary

increases of emissions, including NO_x and PM_{10}, however, project-level impacts to air quality during construction would be less than significant with mitigation.. The project would implement Mitigation Measure MM 4.3-1, which would require adherence to diesel emission-reduction measures during construction which would serve to reduce NO_X and PM_{10} emissions, as well as Mitigation Measure MM 4.3-2, which would require implementation of a fugitive dust control plan which would serve to reduce fugitive PM_{10} emissions during construction.

Construction- and decommissioning-generated emissions for the project, when considered cumulatively along with other past, present and reasonably foreseeable future projects located within the project area, may 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 region is currently designated nonattainment. Even though it has been determined that the project does not exceed applicable thresholds on an individual basis, temporary cumulative regional air quality impacts associated with short-term construction and decommissioning activities would be considered significant and unavoidable.

Biological Resources

There are a number of special-status species that currently utilize the project site and surrounding vicinity. Implementation of the project in addition to other projects under way or proposed within Kern County would impact habitat for transient wildlife species, including burrowing owls, loggerhead shrike, other raptors, migratory birds, 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 project, the region is known to support a diversity of special-status species, most of which are expected to utilize the project site on at least a transient basis. Given the number of present and reasonably foreseeable future development projects in the Antelope Valley, the 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 project would have less-than-significant impacts with the implementation of Mitigation Measures MM 4.1-5 through MM 4.1-7, MM 4.4-1 through MM 4.4-12, MM 4.9-2, and 4.10-2 when combined with other past, present and reasonably foreseeable future projects, the cumulative impact would be significant and unavoidable.

Wildfire

The project would not result in individual impacts related to wildfire, because it would not result in the impairment of an adopted emergency response plan; the exposure of project occupants to pollutant concentrations from a wildfire; require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or the exposure of people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. However, given the project's location in a high wind rural area with limited infrastructure in the vicinity of the project site, the project, when considered cumulatively with past, present and reasonably foreseeable future projects in the vicinity would have a significant and unavoidable cumulative impact related to wildfire.

6.2 Project Objectives

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (*CEQA Guidelines* Section 15126.6(c)). As described in Chapter 3, *Project Description*, of this EIR the following objectives have been established for the project and will aid decision makers in the review of the proposed project and associated environmental impacts:

- Develop a Solar PV power generating project in order to assist the State of California in achieving the Renewable Portfolio Standard obligations and Senate Bill 350 and California Global Warming Solutions Act (AB 32) greenhouse gas reduction goals by providing a significant new source of renewable energy;
- Produce and transmit electricity at a competitive cost;
- Locate generating facilities in a rural portion of southeastern Kern County which receives intense solar radiation and is in proximity to an available interconnection to the existing or permitted electrical transmission system;
- Minimize environmental impacts by:
  - Using existing electrical transmission facilities, rights-of-way, roads, and other existing infrastructure where practicable;
  - Minimizing water use; and
  - Reducing greenhouse gas emissions.
- Use technology that is available, proven, efficient, easily maintained and environmentally sound;
- Assist the County in continuing the goal in the Energy Element of its General Plan to develop large scale solar energy development as a major energy source in the County;
- Contribute to County goal of increasing renewable energy storage; and
- Develop a commercially financeable renewable energy project.

6.3 Overview of the Proposed Project

The proposed project would include the development of a 1,406-acre solar facility and associated infrastructure with the capacity to generate up to 250 MW of renewable electricity. The proposed project consists of two sites: the Chaparral Solar Facility and the Rabbitbrush Solar Facility, which are 774 acres and 632 acres in size, respectively. Collectively, these sites are referred to as the project site. The proposed project would be built either collectively at the same time or alternatively as two approximately 125-MW facilities on the approximately 774-acre Chaparral site and 632-acre Rabbitbrush site as commercial contracts are entered into for each. Depending upon market conditions, the Chaparral and Rabbitbrush facilities may also each include or be developed with an energy storage system (ESS) with the capacity to store up to 1,000 megawatt-hours (MWh) of energy. Each ESS would be located on approximately 5 acres of land within the facility. Power generated by the proposed project would be transferred via proposed collection lines, and then via an existing 230kV gen-tie line to the SCE Whirlwind Substation, as described in Chapter 3, *Project Description*, of the Draft EIR. 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 permanent components: solar PV generating facilities and solar modules; off-site substations; O&M facilities; an electrical collector system and inverters; shared 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 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.

6.4.1 Alternative 1: No Project Alternative

The *CEQA Guidelines* require EIRs to include a No Project Alternative for the purpose of allowing decision makers to compare the effects of approving the proposed project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the 250 MW PV solar facility and associated facilities on the 1,406-acre site would not occur. No collection lines would be constructed. The No Project Alternative would not require a Conditional Use Permit (CUP) for construction and operation of a 250 MW solar project and associated facilities. Amendments to the Willow Springs Specific Plan land use map and circulation element along with public easement vacations would not be required. The No Project Alternative would maintain the current zoning, land use classifications, and existing land uses, which consist mostly of undeveloped desert vegetation. No physical changes would be made to the project site.

6.4.2 Alternative 2: Specific Plan and Zoning Build-Out Alternative

Alternative 2, the Specific Plan and Zoning Build-Out Alternative, would develop the project site to the maximum intensity allowed under the existing Willow Springs Specific Plan land use and zoning classifications, with the proposed Project not permitted or constructed. The project site is currently designated as Map Code(s) 5.3/4.4 (Maximum 10 units/net acre/Comprehensive Planning Area), 5.3/4.4/2.1 (Maximum 10 units/net acre/Comprehensive Planning Area/Seismic Hazard), 5.6 (Minimum 2.5 gross acres/unit), 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 6.2 (General Commercial), and 8.5 (Resources Management [Minimum 20-acre parcel size]).

The project site has various zone classifications which consist of; A FPS (Exclusive Agriculture - Floodplain Secondary Combining), A GH FPS (Exclusive Agriculture – Geologic Hazard Combining – Floodplain Secondary Combining), E(2½) RS FPS (Estate (2½ acres) – Residential Suburban Combining – Floodplain Secondary Combining), E(5) RS FPS (Estate (5 acres) – Residential Suburban Combining –

Floodplain Secondary Combining), and E(10) RS FPS (Estate 10 acres – Residential Suburban Combining - Floodplain Secondary Combining).

Implementation of Alternative 2 would consist of developing the project site under the current land use classification of 5.3/4.4 (Maximum 10 units/net acre/Comprehensive Planning Area), 5.3/4.4/2.1 (Maximum 10 units/net acre/Comprehensive Planning Area/Seismic Hazard), 5.6 (Minimum 2.5 gross acres/unit), 5.7 (Minimum 5 gross acres/unit), 5.75 (Minimum 10 gross acres/unit), 6.2 (General Commercial), and 8.5 (Resources Management [Minimum 20-acre parcel size]).

Given that the zoning classifications for the project site consist of A FPS (Exclusive Agriculture - Floodplain Secondary Combining), A GH FPS (Exclusive Agriculture – Geologic Hazard Combining – Floodplain Secondary Combining), E(2½) RS FPS (Estate (2½ acres) – Residential Suburban Combining – Floodplain Secondary Combining), E(5) RS FPS (Estate (5 acres) – Residential Suburban Combining – Floodplain Secondary Combining), and E(10) RS FPS (Estate 10 acres – Residential Suburban Combining - Floodplain Secondary Combining), the project site would be developed in-accordance with those designations. The portions of the project site zoned as A encompass approximately 1,052 acres, and the portions of the project site zoned as E encompass approximately 354 acres. No solar facilities would be developed under this alternative.

6.4.3 Alternative 3: Reduced Acreage Alternative

Under Alternative 3, the Reduced Acreage Alternative, the project site would be reduced to only include the Rabbitbrush solar facility, avoiding development on the 774-acre Chaparral site. This alternative would reduce the project's footprint from 1,406 acres to 632 acres and would only allow construction on the Rabbitbrush site. Solar panels and associated infrastructure would be located in the reduced project site. The reduced project acreage under this alternative is expected to contain enough land to construct a solar array field and related infrastructure capable of generating approximately 125 MW of renewable energy and storing 1,000 MWh of energy due to the proportional reduction in project size. This would result in the corresponding reduction in renewable energy output and storage capacity from the project by 50 percent. Similar to the proposed project, this alternative would still require the approval of two CUP applications (to allow for the construction and operation of 125 MW photovoltaic electrical generating facility (Section 19.12.030.G) with associated facilities (substation, O&M facility) in an A District and to allow a communication tower (Section 19.12.030.F) in the A Zone District), two Specific Plan Amendment applications (to allow changes to land use classification and to eliminate future road reservations), one Zone Change application, and one Nonsummary Vacation application (vacation of public access easements).

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

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative, would involve the development of a number of geographically distributed small to medium solar PV systems (100 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 1,406 acres of total rooftop area) may be required to attain project's capacity of 250 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 250 MW of electricity, but it would be for onsite use only. This alternative assumes that rooftop development would occur primarily on commercial and industrial structures due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed on site by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities. **Table 6-1**, *Summary of Development Alternatives*, provides a summary of the relative impacts and feasibility of each alternative. A complete discussion of each alternative is also provided below.

TABLE 6-1: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Project	Construction and operation of a solar facility on approximately 1,406 acres would generate up to 250 MW of electricity with the capacity to store up to 1,000 MWh or energy. Approval of six Conditional Use Permits (CUPs) (four for construction and operation of commercial solar electrical generating facilities, two for communications towers), Amendments to the Willow Springs Specific Plan (SPAs) land use map and circulation element, Zone Changes (ZCCs), and nonsummary vacation of public access easements 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 • Avoids need for CUPs, SPAs, ZCCs, and requests to vacate public access easements • Avoids all significant and unavoidable impacts • Greater impacts to GHGs • Less impact in all remaining environmental issue areas • Does not meet any of the project objectives

TABLE 6-1: SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative 2: Specific Plan and Zoning Build-Out Alternative	Project site would be developed to the maximum intensity allowed under the Kern County General Plan land use designations and zoning classifications and other existing applicable restrictions. The portions of the project site zoned as A would be developed with agricultural uses (approximately 1,052 acres), and the portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres).	• Avoids need for CUPs and SPAs, ZCCs, and requests to vacate public access easements • Similar impacts to biological resources, hazards and hazardous materials • Less impact to aesthetics, agricultural and forestry resources, and land use and planning • Greater overall impacts in all remaining environmental issue areas • Does not meet any of the project objectives
Alternative 3: Reduced Acreage Alternative	Construction and operation of one solar facility on approximately 632 acres. This alternative would construct a solar array field capable of generating approximately 125 MW of electricity and storing 1,000 MWh of electricity, thereby reducing the project's renewable energy output by 50 percent. The project site would require approval of two CUPs, two SPAs, two ZCCs and one request to vacate public access easements.	• Similar impacts to greenhouse gas emissions, hazards and hazardous materials, land use and planning, noise, public services, transportation and traffic, and utilities and service systems • Decreased GHG offset benefits to meet project objectives • Less impact in all remaining environmental issue areas • Does not meet all the project objectives
Alternative 4: No Ground-Mounted Utility-Solar Development Alternative – Distributed Commercial and Industrial Rooftop Solar Only	The construction of 250 MW of PV solar distributed on rooftops throughout the Antelope Valley. Electricity generated would be for onsite use only.	• Avoids need for solar facility CUPs, telecommunication tower CUPs, SPAs, ZCCs and requests to vacate public access easements at the project site but may require other entitlements (such as a CUP or variance) on other sites • Avoid significant and unavoidable impacts associated with aesthetics, air quality, and biological resources • Greater impacts to GHG emissions land use and planning, and noise • Similar impacts energy • Less impact in all remaining issue areas • Does not meet all the project objectives

6.5 Alternatives Considered and Rejected

Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid or substantially reduce any significant environmental effects (*CEQA*

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

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

6.5.1 Wind Energy Project Alternative

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

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

In addition, energy production from wind power would not require the significant water usage associated with coal, nuclear, and combined-cycle sources. Turbines used in wind farms for commercial production of electric power are usually three-bladed units that are pointed into the wind by computer-controlled motors. The wind farm would consist of a group of wind turbines placed where electrical power is produced. The individual turbines would be interconnected with a medium-voltage power collection system and a communications network. At a substation, the medium-voltage electrical current would be increased through a transformer before connection to the high-voltage transmission system. Compared with traditional energy sources, the environmental effects of wind power are relatively minor. However, wind farms would not decrease short-term construction-related air emissions. Wind turbines would also have the potential to affect avian species in the local area. In addition, in order for wind turbines to produce an equivalent 250 MW of power that the project would produce, the alternative would require more space than what the project site current accommodates and, consequently, the project site would need to be expanded.

As noted above, some of the project 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, require FAA lighting and are more visible from many viewpoints.
- It may result in additional/greater biological resources impacts to avian species than the project.

- It may generate long-term noise impacts to nearby sensitive receptors from rotating turbine blades.
- It may result in increased land use and planning impacts associated with the project due to the need for an increased project site.

6.5.2 Industrial Power Plant Alternative

This alternative would involve the development of a natural gas-fired power plant or plants (equivalent to 250 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 including aesthetics, air quality, GHG emissions, land use and planning, noise, transportation and traffic, 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.

6.5.3 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 250 MW PV solar facility and 2,000 MWh ESS on a site totaling 1,406 acres. *CEQA Guidelines* Section 15126.6(f)(2(a) states that the key and initial step in considering an alternative site is whether "any of the significant effects of the project would be avoided or substantially lessened" in relocating the project, while remaining consistent with the same basic objectives of the 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. As noted above, 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 because it would not avoid or substantially reduce the significant environmental effects of the proposed project.

6.6 Analysis Format

In accordance with *CEQA Guidelines* Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less, similar, or greater than the corresponding impacts of the project. Furthermore, each alternative is evaluated to determine whether the project objectives identified in Chapter 3, *Project Description*, of this EIR would be mostly attained by the alternative. The project's impacts that form the basis of comparison in the alternatives analysis are those impacts which represent a conservative assessment of project impacts. The evaluation of each of the alternatives follows the process described below.

a) The net environmental impacts of the alternative after implementation of reasonable mitigation measures are determined for each environmental issue area analyzed in this EIR.

b) Post-mitigation significant and less than significant environmental impacts of the alternative and the 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**, *Comparison of Alternatives*, 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: Specific Plan and Zoning Build-Out Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and Unavoidable (project and cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agricultural and Forestry Resources	Less than Significant	Less (NI)	Less (NI)	Less (LTS)	Less (NI)
Air Quality	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative construction)	Less (NI)	Greater (SU)	Less (SU)	Less (LTS)
Biological Resources	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative)	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)	Less (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)	Greater (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 (LTS)	Less (NI)
Noise	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Similar (LTS)
Public Services	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Transportation and Traffic	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Tribal Cultural Resources	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (NI)

TABLE 6-2: COMPARISON OF ALTERNATIVES

Environmental Resource	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: 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
Utilities and Service Systems	Less than Significant with Mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Wildfires	Less than Significant with Mitigation (project); Significant and Unavoidable (cumulative)	Less (SU)	Greater (SU)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	Some	None	All

NI = No Impact
LTS = Less than Significant
SU = Significant and Unavoidable

6.7 Impact Analysis

6.7.1 Alternative 1: No Project Alternative

Environmental Impact Analysis

Aesthetics

Under the No Project Alternative, no development would take place on the project site. The project site would remain in its current state as undeveloped land and no change to the scenic vistas or existing visual character of the site would occur. Impacts to scenic resource and daytime and nighttime views in the area would not occur. Therefore, there would be no impact and the No Project Alternative would result in less impact to aesthetics compared to the 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. The No Project Alternative would not contribute to a cumulative net increase of criteria pollutant in the projects' region. Therefore, there would be no impact to air quality 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, loggerhead shrike, 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 on site would not occur and this alternative would not require mitigation. There would be no impact and the No Project Alternative would result in less impacts related to cultural resource compared to the proposed project.

Energy

Under the No Project Alternative, the project site would remain undeveloped and no energy consumption activities would occur. As such, the No Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. 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 impacts 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 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 site or off site; 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 any of the submitted land use applications (CUP, SPA, ZCC, and requests to vacate public access easements). Current land uses on the site are consistent with the zoning and Willow Springs Specific 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 project.

Noise

Under the No Project Alternative, the project site would remain undeveloped. Noise sources from construction and operation would not be present on site, and existing noise conditions would remain the same. As such, the No Project Alternative would not result in generation of a substantial temporary or permanent increase in ambient noise levels or generate excessive ground-borne vibration. Therefore, there would be no impact and the No Project Alternative would result in less impact related to noise compared to the proposed project.

Public Services

Under the No Project Alternative, the project site would remain undeveloped and no new demand for fire or police protection services would occur. Furthermore, no new demand for schools, parks, or other government facilities 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, police protection, schools, parks, or other government facilities. 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 and Traffic

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(b). In addition, the No Project Alternative would not substantially increase hazards due to a geometric design feature or result in inadequate emergency access. Therefore, there would be no impact and the No Project Alternative would result in less impact related to transportation and traffic than the project.

Tribal Cultural Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. According to record searches and tribal resource consultations, San Manuel Band of Mission Indians (San Manuel) identified a potential tribal cultural resource associated with the village of *Chibubit* within the project site. The County agreed to avoid the potential tribal cultural resource consistent with PRC section 21084.3. Since the potential tribal cultural resource is being avoided, it was not formally evaluated for listing in the CRHR or a local register. The No Project Alternative would not involve construction in the vicinity of the aforementioned tribal cultural resources, the No Project Alternative would not cause a substantial adverse change in the significance 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 less 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, in each case related to the project. However, under the No Project Alternative, the development of other past, present or reasonably foreseeable future projects in the vicinity would result in a cumulatively significant and unavoidable impact to the risks associated with wildfires. Therefore, there would be no impact for the No Project Alternative on an individual basis, but on a cumulative basis with other past, present or reasonably

foreseeable projects, the No Project Alternative (as well as the proposed project) would result in significant and unavoidable impact to risks associated with wildfires.

Comparison of Impacts

The No Project Alternative would avoid creating nearly all of the significant and unavoidable impacts associated with the proposed project. This alternative would result in less impact to all remaining environmental issue areas with the exception of Wildfire and 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.

6.7.2 Alternative 2: Specific Plan and Zoning Build-Out Alternative

Environmental Impact Analysis

Aesthetics

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A (Exclusive Agriculture) would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E (Estate), would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site. Development of the project site with agricultural uses and residential uses at the density permitted by the Willow Springs Specific Plan and Zoning Districts 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. Development of residential uses would alter existing views of the project area; however, these single-family dwellings would be spread out in the project area. Furthermore, the development of single-family dwellings would generally cause less visual quality impacts than the development of uniform, large-scale solar facilities, which would remove large areas of natural vegetation. Single-family housing may be able to avoid such areas and build in areas that are less impactful. As such, significant and unavoidable impacts related to visual resources would be eliminated under this alternative. Therefore, impacts would be less than significant under the General Plan/Specific Plan and Zoning Build-Out Alternative and, thus, this alternative would result in less aesthetic impacts compared to the project.

Agriculture and Forestry Resources

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E,

would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site. Under this alternative, there would be no zoning change, and approximately 1,052 acres of land would be developed for agricultural uses, therefore increasing the total amount of active agricultural land in Kern County. Development of a portion of the project site with residential uses would not result in impacts related to the conversion of designated Farmland to non-agricultural uses, as this development would be consistent with the existing zoning. As noted in Section 4.2, *Agricultural Resources*, the project site is not under a Williamson Contract and, therefore, development under this alternative would not conflict with a Williamson Act contract. Furthermore, development under Alternative 2 would be consistent with the existing zoning and the portions of the project site designated as A (Exclusive Agriculture) would remain. Therefore, there would be no impact under the Specific Plan and Zoning Build-Out Alternative and, thus, this alternative would result in less agricultural resource impacts as the proposed project.

Air Quality

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site. Both the proposed project and the General Plan and Zoning Build-Out Alternative would result in short-term construction emissions, and would require implementation of mitigation measures in order to reduce the severity of construction-related emissions. The conversion of the project site to agricultural uses would require similar heavy equipment to the proposed project. Thus, similar to the proposed project, this alternative would require implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 in order to reduce the severity of construction-related emissions. However, Similar to the proposed project, impacts would remain significant and unavoidable for cumulative construction impacts. Operational emissions associated with the proposed agricultural uses under the Specific Plan and Zoning Build-Out Alternative would be greater due to routine emissions associated with agricultural vehicles, livestock emissions, residential uses etc. Given this increase, this alternative would result in greater air quality impacts in the air basin than the proposed project.

As it relates to impacts on implementation of the applicable air quality plan, project cumulative construction impacts would be significant and unavoidable. Similarly, the Specific Plan and Zoning Build-Out Alternative would result in construction emissions of a magnitude that would obstruct the air quality planning goals set forth by EKAPCD. Therefore, similar to the project, cumulative 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 *Coccidioides immitis, the fungal spore that has potential to cause Valley Fever*, as fugitive dust is generated during construction. However, dust-minimizing techniques, as implemented through Mitigation Measure MM 4.3-3, would reduce these impacts to less than significant. As with the proposed project, the Specific Plan and Zoning Build-Out Alternative would result in less-than-significant impacts related to toxic air contaminants, localized pollutant concentrations, and asbestos.

Overall, even with implementation of similar mitigation proposed for the project, impacts to air quality under the Specific Plan and Zoning Build-Out Alternative would likely remain significant and unavoidable with regard to cumulative construction impacts 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 Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site.

Due to the residential component of the Specific Plan and Zoning Build-Out Alternative, similar to the proposed project, development would occur under this alternative and, as such, there is the potential to impact biological resources. Like the proposed project, Alternative 2 would be required to implement mitigation measures to avoid such impacts. However, development under this alternative would be less given that portions of the project site would remain zoned as A (Exclusive Agriculture). 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.

Furthermore, the single-family dwellings would be spread out in the project area. Given this space, it is likely that impacts to biological resources, particularly the Joshua trees that would be affected by the project, would be less than 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 Specific Plan and Zoning Build-Out Alternative would have an impact to Joshua trees, cholla, and beavertail cactus as well as golden eagle California condors, burrowing owls, loggerhead shrike, Swainson's hawk, and desert kit fox, migratory birds, and American badger,. With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-12, 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 potential jurisdictional features to ephemeral drainages within the project site. However, as with the project, implementation of Mitigation Measures MM 4.4-10 and MM 4.4-11 and MM 4.10-2, would reduce impacts to less than significant under the Specific 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 Specific 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 Specific 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 Specific 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 Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site.

To convert portions of the project site to agricultural uses, this alternative would involve greater ground disturbance as opposed to the proposed project that would have some no build areas. Ground-disturbing activities associated with the project have the potential to encounter undocumented archaeological resources that could qualify as historical resources. Similar to the proposed project, the Specific Plan and Zoning Build-Out Alternative would implement Mitigation Measures MM 4.5-1 through MM 4.5-4. However, in the unlikely event that human remains are inadvertently discovered during project construction activities, implementation of Mitigation Measure MM 4.5-5 would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, although both the 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 Specific 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 Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site.

The portions of the project site that would be developed with agricultural uses would require less-intensive construction activities related to the consumption transportation-related energy (petroleum-based fuels). However, greater operational electricity usage associated with the greater consumption of water associated with the proposed agricultural uses would occur. The portions of the project site that would be developed with single-family residences, would require similar construction activities, and more-intensive operational activities, related to the consumption of electricity, natural gas and transportation-related energy. Overall, the residential uses would require greater energy consumption.

Similar to the proposed project, the Specific Plan and Zoning Build-Out 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. In addition, similar to the proposed project, the Specific Plan and Zoning Build-Out Alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Based on the above, impacts under the Specific 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 renewable energy, and would therefore, not assist the state in meeting its renewable energy generation goals to the fullest extent as compared to the proposed project.

Geology and Soils

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site.

Compared to the project, the Specific Plan and Zoning Build–Out Alternative would have a greater potential to expose people to seismic hazards because this alternative would establish a permanent residential population on site.

Similar to the proposed project, the Specific 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 Specific Plan and Zoning Build-Out Alternative would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2019 Edition (CCR Title 24). Adherence to all applicable regulations, as well as implementation of Mitigation Measure MM 4.7-1 would ensure that effects from strong seismic ground shaking would be minimized. As it relates to unique paleontological resource or site or unique geologic feature, similar to the proposed project, under the Specific Plan and Zoning Build-Out Alternative any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. As such, the Specific Plan and Zoning Build-Out Alternative would implement Mitigation Measure MM 4.7-2 through MM 4.7-4 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 Specific Plan and Zoning Build-Out Alternative would result in greater initial soil disturbance during construction and would place a permanent residential population in the vicinity of seismic hazards.

Greenhouse Gas Emissions

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site.

As portions of the Specific Plan and Zoning Build-Out Alternative would develop land uses that would emit GHG emissions throughout the life of the project (from increased water usage, traffic, operation of agricultural equipment, and livestock emissions), this would result in a net gain of GHG emissions within California. Unlike the proposed project, the Specific Plan and Zoning Build-Out Alternative would not assist an offtaker[1] in reducing its GHG emissions as consistent with the California Global Warming Solutions Act. Impacts from the Specific 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 as with the proposed project.

[1] An “offtaker” is a purchaser of renewable energy in a solar power purchase agreement.

Hazards and Hazardous Materials

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site.

There are no known hazardous materials in the soil that would be disturbed during construction of either the agricultural uses or residential uses. Agricultural uses on the project site could require the use of hazardous materials during operation including herbicides and pesticides. In addition, because the Specific Plan and Zoning Build-Out Alternative has the potential for development of residential units, there is an increased potential for the use of household chemicals as well as chemical use similar to the proposed project, including fuels, solvents, paint, lubricants, and other potentially hazardous materials. However, similar to the project, standard BMPs would ensure that exposure to potentially hazardous materials used or found on site would be reduced or minimized. Similar to the proposed project, the Specific Plan and Zoning Build-Out Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2, and MM 4.17-1 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation, including the use of pesticides and herbicides; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Implementation of these mitigation measures would reduce impacts related to a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As it relates to wildland fires, the project site is not within an area of high or very high fire hazard. However, similar to the project, the Specific Plan and Zoning Build-Out Alternative would implement Mitigation Measure MM 4.14-1, 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 Specific 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 Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site. Similar to the proposed project, the agricultural development 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.

The residential component of the Specific Plan and Zoning Build-Out Alternative would result in larger areas of change to the landscape and drainage patterns of the project site. Construction of the Specific Plan and Zoning Build-Out Alternative would also result in an increase wastewater and urban runoff generated from

development of residential uses. Such development would increase impervious surfaces compared to the proposed project and result in a potentially greater impact on water quality. Once operational, a conservative estimated demand for water is 1 acre-foot of water per year per residence, which would result in greater demand under the Specific Plan and Zoning Build-out Alternative than under the proposed project.

The agricultural component of the Specific Plan and Zoning Build-Out Alternative would likely require a greater amount of operational water than the proposed project for irrigation of approximately 1,052 acres of crops or livestock operations. With regard to operation, the agricultural and residential uses would substantially increase water demand compared to the proposed project.

Similar to the proposed project, the Specific Plan and Zoning Build-Out Alternative would include completion of a NPDES completion form as well as implementation of Mitigation Measure MM 4.10-1 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 Specific Plan and Zoning Build-Out Alternative. As it relates to groundwater supplies, water requirements under the Specific 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 Specific Plan and Zoning Build-Out Alternative would alter existing onsite drainage patterns and flowpaths to some degree, and could alter the way that stormwater from upgradient flows across the project site during major events. Similar to the proposed project, the Specific 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 site or off site 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 Specific 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 project would not conflict with the groundwater management of the area and the potential impacts would be less than significant.

Overall, although both the project and this alternative would result in less-than-significant impacts with the implementation of mitigation, the Specific 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, and both agricultural activities and residential uses would require greater operational water use.

Land Use and Planning

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Solar panels would not be installed and solar energy would not be generated on the site. Unlike the proposed project, the Specific Plan and Zoning Build-Out Alternative would not conflict with the existing land use at the project site, because

the site would be developed with the current Specific Plan land uses and zoning designations. This alternative would be consistent with current zoning as well as existing land use plans, policies, and regulations and no CUP, public vacations or Specific Plan/ Specific Plan Circulation Element Amendment would be required. Therefore, there would be no impact and the Specific 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 Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). The establishment of agricultural uses on site would have a similar potential as the project to impact the future extraction of mineral resources on adjacent lands. There are no identified mineral resources on the project site and the project would result in less-than-significant impacts to mineral resources; therefore, the Specific Plan/Specific Plan and Zoning Build-Out Alternative would result in similar impacts to mineral resources compared to the project.

Noise

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). 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 and residential uses would require similar heavy equipment as required for the construction of the proposed project. In addition, for development of the residential uses, 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 and residential uses, this alternative would generate greater noise than the proposed project associated with the daily operation of agricultural equipment, worker vehicles, and residential activities.

Under this alternative, similar to the proposed project, construction activities have the potential to result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards. However, implementation of Mitigation Measures MM 4.13-2 and MM 4.13-3 are designed to reduce impacts to the extent feasible during construction activities and, thus, impacts would be less than significant. During operation, there would be an increase in daily traffic to the project site due to agricultural and residential uses. Additionally, continuous human presence on the project site would also be a source of permanent onsite noise. However, the operation of solar trackers, new electrical collection lines, inverters, medium voltage transformers, substation, and ESS would not generate permanent noise levels in excess of noise standards or create a substantial increase in ambient noise levels within the project site. In addition, operational maintenance activities would generate minimal noise.

The nearest offsite structure to the Chaparral Solar Facility construction area is the residence (Receptor #3) located approximately 120 feet east along Rosamond Boulevard/100th Street West. At this distance, vibration velocities would range from approximately 0.00 to 0.061 in/sec PPV. The nearest offsite structures to the Rabbitbrush Solar Facility construction area are the residences (Receptor #17) located approximately 170 feet to the west of the Rabbitbrush Facility's western boundary and the residence (Receptor #19) located approximately 170 feet east along Rosamond Boulevard. At this distance, vibration velocities would range from approximately 0.00 to 0.044 in/sec PPV. Therefore, as each of these values are

below the 0.2 in/sec PPV significance threshold for non-engineered timber and masonry buildings and the 0.4 in/sec PPV human annoyance criteria, no sources of groundborne vibration would be expected to affect receptors outside of the work areas, and there would not be any potential for excessive exposure of persons to or generation of groundborne vibration levels during project construction. Operation of the Specific Plan and Zoning Build-Out Alternative would involve mostly regular maintenance trucks accessing the project site, residential traffic, 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.

Both the project and this alternative would result in less–than-significant construction impacts with mitigation. However, the Specific Plan and Zoning Build-Out Alternative would result in greater permanent noise impacts during operation than the proposed project due to the development of agricultural and residential uses, which involve the use of agricultural equipment and residential traffic.

Public Services

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). The proposed agricultural and residential uses would increase the need for public services, including fire and police protection, in an area that is not currently serviced.

In particular, similar to the proposed project, construction of the Specific 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, similar to the project, the Specific 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 would not result in a change in population, as agricultural employees would likely come from the surrounding area, while the portions of the project site developed with residential uses would establish a permanent population. Similar to the project, the Specific Plan and Zoning Build-Out Alternative would implement Mitigation Measures MM 4.14-2 through MM 4.14-5, 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, require payment assessed taxes if the project is sold to a city, county, or utility company, and encourage the project operator to hire at least 50 percent of their workers from local Kern County communities. Implementation of Mitigation Measure MM 4.14-1 would also reduce fire risks on site during operation of this alternative. Impacts related to fire protection would be less than significant with mitigation.

With regard to police protection, while the project site is located in an area that is unlikely to attract attention, construction activities related to installation of new structures would increase traffic volumes along SR 58 and SR 14, similar to the proposed project. The increase in traffic related to development of agricultural and residential uses during construction 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. During operation of this alternative, agricultural uses would increase operational traffic due to the increase employees travelling to the project site, and residential uses would increase daily traffic due to residential activity. However, the increase is not likely to have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

With regard to schools, parks, and other government facilities, similar to the proposed project, under the Specific Plan and Zoning Build-Out Alternative, construction workers would likely come from an existing local and/or regional construction labor force and would not likely relocate their households as a consequence of working on the project. Therefore, the short-term increased employment of construction workers on the project site would not result in a notable increase in the residential population of the area surrounding the project site. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities. During operations under the Specific Plan and Zoning Build-Out Alternative, agricultural and residential uses would establish a larger permanent local population than under the proposed project. However, similar to the proposed project, agricultural 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 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 under the Specific Plan and Zoning Build-Out Alternative. However, the development of 354 acres of new single-family residential units would be expected to result in an increased demand for or use of the local schools, parks, or public facilities.

Although both this alternative and the project would result in less-than-significant impacts with implementation of mitigation, the Specific Plan and Zoning Build-Out Alternative would result in greater impacts to public services compared to the proposed project due to proposed agricultural and residential uses, which would result in an increase in long-term population.

Transportation and Traffic

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). With regard to the agricultural uses, construction-related traffic for the conversion of the project site to agricultural uses would be similar to the proposed project. Once operational, the Specific Plan and Zoning Build Out Alternative for the portion of the project site zoned as A would involve more routine vehicle trips associated with agricultural uses. Due to the residential component of this alternative, construction-related traffic would be similar to the proposed project because development of residential units would likely require similar numbers of construction-related workers and material transport trips. Additionally, like the proposed project, construction of residences could occur within the same time frame as other projects in the area, thereby contributing to cumulative traffic increases. However, once operational, vehicle trips associated with agricultural uses would be limited to the employees that would work on the site. Conversely, with the Specific Plan and Zoning Build Out Alternative, operational vehicle trips associated with the numerous residences would be significantly greater than the proposed project due to the increased residential population.

Similar to the proposed project, during construction of the Specific Plan and Zoning Build-Out Alternative, which would require similar construction trips for installation of the residential uses, all study roadway segments are forecasted to operate at Caltrans- or County-defined acceptable LOS D conditions or better. As construction impacts would be less than significant, operation of this alternative would also have a less-than-significant impact on area roadways.

With regard to consistency with *CEQA Guidelines* Section 15064.3(b) as regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a transportation impact. Therefore, impacts related to *CEQA Guidelines* Section 15064.3(b)

would be less than significant under the Specific Plan and Zoning Build-Out Alternative, as with the proposed project.

Therefore, although both this alternative and the project would result in less-than-significant impacts, impacts to transportation and traffic from the Specific Plan Build-Out Alternative would be greater when compared to those of the project as operational agricultural uses and residential would increase the amount of trips to the project site as compared to the project.

Tribal Cultural Resources

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). According to record searches, San Manuel identified a potential tribal cultural resource associated with the village of *Chibubit* within the project site. The County agreed to avoid the potential tribal cultural resource consistent with PRC section 21084.3. Since the potential tribal cultural resource is being avoided, it was not formally evaluated for listing in the CRHR or a local register. As such, the project will avoid impacts to tribal cultural resources. The Specific Plan and Zoning Build-Out Alternative is expected to result in greater tribal cultural resource impacts as greater ground disturbance (i.e. more acreage subjected to grading/tilling as compared to the project) would be required under this alternative which could affect undocumented subsurface tribal cultural resources.

Utilities and Service Systems

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres).

As with the proposed project, conversion of the project site to agricultural and residential uses would require water usage for dust suppression as well as generation of wastewater, usage of electrical power, and telecommunications. The proposed project would not use natural gas, however conversion of the project site to agricultural and residential uses would require natural gas. In addition, construction of the Speific Plan and Zoning Build-Out Alternative would not substantially alter stormwater drainage. With regard to operation, the agricultural and residential uses would substantially increase water demand compared to the proposed project. Wastewater and solid waste generation associated with this alternative would also increase compared to the proposed project due to the increase in the number of employees associated with the agricultural uses, as well as the residential activities. Development of the residential component of the Specific Plan and Zoning Build–Out Alternative would increase impervious surfaces compared to the proposed project. However, similar to the proposed project, the Specific Plan and Zoning Build-Out Alternative would implement Mitigation MM 4.10-1, which includes measures to offset increases in stormwater runoff caused by the project and would further reduce impacts.

Although both the project and this alternative would result in less-than-significant impacts, the Specific 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 and residential uses.

Wildfires

Under the Specific Plan and Zoning Build-Out Alternative, portions of the project site zoned as A would be developed for agricultural uses (approximately 1,052 acres), and portions of the project site zoned as E, would be developed with single-family residential units (approximately 354 acres). Impacts related to wildfires for the portion of the project site that would be developed for residential uses would be greater than the impacts generated by the proposed project as they propose uses that add increased human presence and may introduce additional vegetation associated with the residential development. Furthermore, 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 Specific 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 project, which would further reduce the fire risks on site. With regard to the installation or maintenance of associated infrastructure, agricultural uses would not require any installation of associated infrastructure, however, residential uses would require installation of electrical infrastructure, similar to the proposed project. The installation of electrical infrastructure 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 Specific Plan and Zoning Build-Out Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Based on the above, with implementation of similar mitigation as proposed for the project, impacts would remain less than significant under this alternative as it relates to wildfire impacts. However, the Specific Plan and Zoning Build-Out Alternative would have greater impacts from risks associated with wildfires than the proposed project due to the agricultural and residential uses proposed under this alternative.

With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the Specific 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 Specific Plan and Zoning Build-Out Alternative would result in less impacts 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, 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 on site, 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 renewable energy as compared to the proposed project, and would therefore, not assist the state in meeting its renewable energy generation goals. 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 on site from the proposed agricultural uses. This alternative would result in greater GHG emission impacts than the project because the potential offset or displacement of GHG emissions from operation of the solar power generating facility, compared with traditional gas- or coal-fired power plants, would not be realized. Greater impacts to hydrology and water quality would result from continued ground disturbance from activities such as grazing and plowing and the application of 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, as well as residential traffic. The increase in human population on site is also responsible for greater impacts to public services, transportation and traffic, utilities and service systems, and wildfires. This alternative would not eliminate significant and unavoidable impacts associated with air quality (cumulative only), and biological resources (cumulative only).

Relationship to Project Objectives

The Specific Plan and Zoning Build-Out Alternative would not achieve any of the project objectives listed above in Section 6.2, including the project's objective related to developing solar facilities to produce clean electricity to help achieve California's renewable energy goals.

6.7.3 Alternative 3: Reduced Acreage Alternative

Environmental Impact Analysis

Aesthetics

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres.

With regard to impacts related to scenic vistas, there are no local areas that are designated as scenic vistas within the vicinity of the project. However, the project site is located approximately 4.5 miles west of the PCT, which is designated as a National Scenic Trail by the U.S. Forest Service. The PCT is a public recreational facility recognized as offering views that can be considered scenic. However, given the 4.5-mile distance, views of the project site are likely non-existent and if there is a view, it would not be a predominant subject of views from the PCT. Impacts would be less than significant.

With regard to scenic resources, as discussed in the IS/NOP, the project would not be visible from any Officially Designated State or County Scenic Highway and 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 and other facilities. Similar to the proposed project, the Reduced Acreage Alternative would similarly implement Mitigation Measures MM 4.1-1 through MM 4.1-4, 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 all the solar 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. Nevertheless, similar to the proposed project, impacts would be significant and

unavoidable. In addition, 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 4.1-4 would be implemented to 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, similar to the project, cumulative impacts from the change to the visual character of the site would remain significant and unavoidable for the Reduced Acreage Alternative.

With regard to project impacts due to new sources of light or glare, this alternative would result in relatively less impact than the proposed project due to the reduced project footprint. Furthermore, per Mitigation Measure MM 4.1-5, any nighttime construction would use lighting designed to provide the minimum illumination needed, thereby minimizing adverse impacts on any nearby residents. Mitigation Measure MM 4.1-5 would also require the project to comply with the Dark Skies Ordinance for all lighting to be directed downward and shielded. Regarding glare, this alternative would also have to implement Mitigation Measures MM 4.1-6 and MM 4.1-7, which require the use of non-reflective and non-glare materials when feasible. Impacts related to light and glare on the Reduced Acreage Alternative site would still be less than significant. However, due to the reduction in project site size, the Reduced Acreage Alternative would have less impact to aesthetics than the proposed project.

Agriculture and Forestry Resources

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 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 and would convert land zoned for agriculture to non-agricultural use. Similar to the project, the project would not directly or indirectly impact farmland, as the site has no agricultural production, past or present and is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project area. Furthermore, according to available data, none of the parcels included as part of the proposed site or any property in the vicinity of the project are subject to a Williamson Act Land Use contract.

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 project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres, thereby reducing the overall extent of construction-related impacts to air quality. The use of construction vehicles, heavy equipment operation, and worker carpool trips would be less compared to the proposed project. Similar to the proposed project, this alternative would require implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2 in order to reduce the severity of construction-related emissions. Similar to the proposed project, impacts would remain significant and unavoidable for cumulative temporary construction impacts as the daily emissions under this alternative, as the construction schedule for cumulative projects could still overlap with the Reduced Acreage Alternative. Operational emissions would likely be reduced under this alternative as fewer

maintenance trips would be required with the reduced project scale. As such, similar to the proposed project, operational impacts would be less than significant.

As it relates to impacts on implementation of the applicable air quality plan, since temporary cumulative construction impacts would be significant and unavoidable, the Reduced Acreage Alternative would result in temporary 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 *Coccidioides immitis, the fungal spore that has potential to cause* Valley Fever as fugitive dust is generated during construction. However, dust-minimizing techniques, as implemented through Mitigation Measure MM 4.3-3, would reduce these impacts to less than significant. As with the 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 project, impacts to air quality under this alternative would likely remain significant and unavoidable, despite resulting in a reduction in emissions due to reduced grading footprint under this alternative. The Reduced Acreage Alternative would result in less overall impacts related to air quality than the proposed project.

Biological Resources

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. As it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS), as with the proposed project, the Reduced Acreage Alternative would have an impact to transient wildlife species, including burrowing owls, loggerhead shrike, other raptors, migratory birds, 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 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. With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-12, impacts would be reduced to less than significant. However, as this alternative would avoid disturbing 774 acres of land within the Chaparral portion of the project site, the Reduced Acreage Alternative 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 jurisdictional features to ephemeral drainages within the project site. However, as with the project, implementation of Mitigation Measures MM 4.4-10 and MM 4.4-11 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 less 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 774 acres of land within the Chaparral portion of the project site, the Reduced Acreage Alternative would result in less impacts related species identified as candidate, sensitive, or special-status species, as well as impacts related to riparian habitat or other sensitive natural community 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 project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,1,406 acres to 632 acres.

Ground-disturbing activities associated with the 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 through MM 4.5-4. However, in the unlikely event that human remains are inadvertently discovered during project construction activities, implementation of Mitigation Measure MM 4.5-5 would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, implementing mitigation similar to the mitigation proposed for the project, impacts to cultural resources under this alternative would be less than significant. However, the Reduced Acreage Alternative would result in less impacts related to cultural resources compared to the proposed project due to the reduction in ground disturbance required under this alternative.

Energy

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. Eliminating 774 acres from project development would result in reduced energy use, as the Reduced Acreage Alternative would generate approximately 125 MW, due to the proportional reduction in project size. Therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced as compared with the 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 reduced in comparison with 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 fewer energy impacts compared to the proposed project.

Geology and Soils

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 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, seismic-related ground failure including liquefaction, unstable or expansive soils. Adherence to all applicable regulations, as well as implementation of Mitigation Measures MM 4.7-1 would ensure that effects from rupture of a known earthquake fault, seismic-related ground failure including liquefaction, unstable or expansive soils, would be minimized.

With regard to soils incapable of adequately supporting the use of septic tanks or alternative wastewater systems, similar to the proposed project, the Reduced Acreage Alternative would require the construction of a septic wastewater treatment system. However, the onsite soils have been characterized as well drained and moderate to highly permeable. In addition, similar to the proposed project, the Reduced Acreage Alternative's septic system would be required to be permitted through the Kern County Public Health Services Department which includes a permitting process to ensure adequate drainage of wastewater. 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 Measures MM 4.7-2 through MM 4.7-4 to reduce impacts to paleontological resources. Therefore, impacts would be less than significant.

As discussed above, with implementation of mitigation similar to that required for the proposed project, impacts to geology and soils would likely be less than significant. However, impacts to geology and soils would result in less impact to geology and soils compared to the proposed project due to the reduction in ground disturbance required under this alternative.

Greenhouse Gas Emissions

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. Given a smaller project footprint than the proposed project, the construction and operational impacts from the Reduced Alternative would remain less than the proposed project. Therefore, the Reduced Acreage Alternative would result in fewer GHG emissions during construction and operations when compared with the proposed project. Eliminating 774 acres from project development would result in reduced energy generation by a factor of 50 percent, as the Reduced Acreage Alternative would generate approximately 125 MW due to the proportional reduction in project size. While project-related GHG impacts would remain less than significant, the 50 percent reduction in the production of renewable energy from this alternative would result in greater GHG impacts in comparison to the project due to the corresponding loss in GHG offsets. .

Hazards and Hazardous Materials

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2, and

MM 4.17-1 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation, including the use of pesticides and herbicides; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. Implementation of these mitigation measures would reduce impacts related to a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. With regard to hazardous emissions within 0.25 miles of a school, the nearest school to the project site is located approximately 4.5 miles west of the site, and therefore, the project would result in no impact related to hazardous emissions within 0.25 miles of a school.

As it relates to wildland fires, the project site is not within an area of high or very high fire hazard. However, similar to the project, the Reduced Acreage Alternative would include an ESS 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 not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 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 implement Mitigation Measure MM 4.10-2, which requires the project to: (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 site or off site 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 less impact related to hydrology and water quality compared to the proposed project due to the reduced footprint, which would result in reduced grading activities and would reduce the amount of impervious surfaces compared to the proposed project.

Land Use and Planning

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. Nevertheless, development of the Reduced Acreage Alternative alone would still require two CUPs (one for the solar facility and one for the communication tower), two Specific Plan Amendments (one for land use designation and one for elimination of future road reservations), a zone change, and non-summary vacation request to vacate public access easements. 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 proposed project.

Mineral Resources

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. There are no identified mineral resources on the project site and this alternative would result in less-than-significant impacts to mineral resources; therefore, the Reduced Acreage Alternative would result in similar impacts to mineral resources compared to the proposed project.

Noise

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be reduced when compared with the proposed project.

Under this alternative, similar to the proposed project, construction activities have the potential to result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards. However, Mitigation Measures MM 4.13-1 through MM 4.13-3 are designed to reduce impacts to the extent feasible during construction activities and, thus, impacts would be less than significant. The operation of solar trackers, new electrical collection lines, inverters, medium voltage transformers, substation, and ESS would not generate permanent noise levels in excess of noise standards or create a substantial increase in ambient noise levels within the project site. In addition, operational maintenance activities would generate minimal noise. Thus, operational impacts would be less than significant. In addition, the nearest offsite structure to the Chaparral Solar Facility construction area is the residence (Receptor #3) located approximately 120 feet east along Rosamond Boulevard/100th Street West. At this distance, vibration velocities would range from approximately 0.00 to 0.061 in/sec PPV. The nearest offsite

structures to the Rabbitbrush Solar Facility construction area are the residences (Receptor #17) located approximately 170 feet to the west of the Rabbitbrush Facility's western boundary and the residence (Receptor #19) located approximately 170 feet east along Rosamond Boulevard. At this distance, vibration velocities would range from approximately 0.00 to 0.044 in/sec PPV. Therefore, as each of these values are below the 0.2 in/sec PPV significance threshold for non-engineered timber and masonry buildings and the 0.4 in/sec PPV human annoyance criteria, no sources of groundborne vibration would be expected to affect receptors outside of the work areas, and there would not be any potential for excessive exposure of persons to or generation of groundborne vibration levels. 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 during construction and decommissioning activities and impacts related to noise would be similar to those of the proposed project. This alternative is expected to result in less than significant with mitigation noise impacts during operational activities and impacts related to noise would be less than those of the proposed project given the reduced footprint and similar time period of temporary noise impacts.

Public Services

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be reduced when compared with the proposed project.

Similar to the proposed project, construction of the Reduced Acreage Alternative would result in a number of construction workers on the project site and increased fire service demands would occur during construction of this alternative. However, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-1, which would require the implementation of a Fire Safety Plan. During operation, the reduced acreage alternative project site would require up to 10 full-time equivalent (FTE) personnel. Implementation of Mitigation Measure MM 4.14-1 would also reduce fire risks on site during operation of this alternative. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.14-2 through MM 4.14-5, 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, require payment assessed taxes if the project is sold to a city, county, or utility company, and encourage the project operator to hire at least 50 percent of their workers from local Kern County communities. Impacts related to fire protection would be less than significant with mitigation.

With regard to police protection, while the project site is located in an area that is unlikely to attract attention, construction activities would increase traffic volumes along SR 58 and SR 14, similar to the 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.

With regard to schools, parks, and other government facilities, similar to the proposed project, under the Reduced Acreage Alternative, construction workers would likely come from an existing local and/or regional construction labor force and would not likely relocate their households as a consequence of working on the project. Therefore, the short-term increased employment of construction workers on the project site would not result in a notable increase in the residential population of the area surrounding the project site. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities. During operations under the Reduced Acreage Alternative, fewer staff would be required to operate the O&M facility than under the proposed project (which proposes two O&M facilities (one per each solar facilitiy)). However, similar to the proposed project, 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 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 under the Reduced Acreage Alternative. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities, and, similar to the proposed project, there would be no impact.

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 and Traffic

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. Under the Reduced Acreage Alternative all construction and operational methods, workforce, and timing would be reduced when compared with 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 D conditions or better. During operation of this alternative, day to day operations and maintenance trips would be reduced in comparison with those of the 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(b), as regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a transportation impact. Therefore, impacts related to *CEQA Guidelines* Section 15064.3(b) would be less than significant under the 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 and traffic as the proposed project.

Tribal Cultural Resources

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. According to record searches, tribal resource consultations, San Manuel identified a potential tribal cultural resource associated with the village of *Chibubit* within the project site. The County agreed to avoid the potential tribal cultural resource consistent with PRC section 21084.3. Since the potential tribal cultural resource is being avoided, it was not formally evaluated for listing in the CRHR or a local register. Because identified tribal cultural resources on the project site will be avoided, impacts to tribal cultural resources would be similar to the project and impacts to tribal cultural resources would be less than significant under the Reduced Acreage Alternative.

Utilities and Service Systems

Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. Eliminating 774 acres from project development would result in reduced demand for utilities and service systems, as the Reduced Acreage Alternative would generate approximately 125 MW due to the proportional reduction in project size, and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced in comparison with the proposed project.

As with the proposed project, project construction and operations under the Reduced Acreage Alternative would require water usage for dust suppression as well as minimal generation of wastewater, usage of electrical power, and telecommunications. In addition, construction of the Reduced Acreage Alternative would not substantially alter stormwater drainage. With regard to operation, the solar panels installed under the Reduced Acreage Alternative would require a reduced water demand in comparison with the proposed project. Wastewater and solid waste generation associated with this alternative would also be reduced compared to the proposed project due to the reduced number of employees required for maintenance of the solar panels. As the Reduced Acreage Alternative would develop the project site, impervious surfaces would be minimized as much as possible, as with the proposed project. Similar to the proposed project, the Reduced Acreage Alternative would implement Mitigation Measure 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 not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 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 on site. 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 to the extent necessary, 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 past, present and reasonably foreseeable future 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, and would generate approximately 125 MW due to the proportional reduction in project size and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced in comparison with the proposed project. Due to the reduced footprint, the Reduced Acreage Alternative would result in less or similar impacts for all of the environmental issue areas. However, this alternative would not eliminate significant and unavoidable impacts associated with aesthetics (project and cumulative), air quality (cumulative construction only), biological resources (cumulative only), and wildfires (cumulative only).

Relationship to Project Objectives

The Reduced Acreage Alternative would meet most of the project objectives listed above in Section 6.2. Under the Reduced Acreage Alternative, the project would not develop the Chaparral solar facility site and would reduce the project's footprint from 1,406 acres to 632 acres. Therefore, this alternative would create fewer environmental impacts; however, it would not reduce any identified significant and unavoidable impact to less than significant.

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

Environmental Impact Analysis

Aesthetics

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout the Antelope Valley.

With regard to impacts related to scenic vistas, the quality of the existing scenic vista several KOPs are considered moderate to low given the existing visible solar facilities and wind turbines. Under the No Ground-Mounted Utility-Solar Development Alternative 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 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 exposure to *Coccidioides immitis, the fungal spore that has potential to cause* valley fever. Implementation of Mitigation Measures MM 4.3-3 and MM 4.3-5 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 MM 4.4-12 would not be required. Operation of the small to medium solar PV systems would continue to require implementation of Mitigation Measures MM 4.4-10 and MM 4.4-11. 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 50-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, construction would be limited to

trucks transporting the solar panels and installation of the solar panels on the rooftops of existing buildings. Implementation of Mitigation Measure MM 4.3-1 would still be required during construction as it requires implementation of energy-efficient and alternatively-fueled equipment during construction. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would have a less-than-significant impact related to wasteful, inefficient, or unnecessary consumption of energy resources and this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As similar energy generation capabilities would be provided, impacts would be similar 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 4.7-4. 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 4.17-1 in order to avoid spills and minimize impacts in the event of a spill; regulate the use of hazardous materials during construction and operation; and ensure that wastes requiring special disposal are handled according to state and county regulations that are in effect at the time of disposal, respectively. 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 ESS component. However, due to the numerous power lines on each individual rooftop 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 No Ground-Mounted Utility-Solar Development Alternative 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 CUPs, Zone Changes, Specific Plan Amendment (to land use designation or to eliminate future road reservations), or public access easement vacations 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 to land use and planning under the No Ground-Mounted Utility-Solar Development Alternative would be less than significant, but would be greater than the proposed project.

Mineral Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout the Antelope Valley. Since this alternative would not disturb any ground surfaces, there would be no impact to mineral resources. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts to mineral resource compared to the proposed project as no ground disturbance would occur.

Noise

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities. Rooftops of existing commercial and industrial buildings that would be developed under this alternative would be in developed areas. As a result, noise related to construction activities would likely impact sensitive receptors during construction. 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, construction and operational vibration and noise impacts for the No Ground-Mounted Utility-Solar Development Alternative would be less than significant. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would result in similar 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 significantly increase the concentration of persons in an area, either temporarily or permanently.

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 ESS component. However, due to the numerous power lines on each individual rooftop 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 because the proposed small to medium solar PV systems would be developed in urbanized areas that are in closer proximity to existing fire and police protection services.

Transportation and Traffic

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(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(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 and traffic 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 fewer 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, this alternative would likely require minimal water as no dust suppression would be required during construction. This alternative would also require minimal generation of wastewater, usage of electrical power, 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, noise, public services,

transportation and traffic, tribal cultural resources, and utilities and service systems. Further, this alternative would avoid the significant and unavoidable impacts to aesthetics (project and cumulative), air quality (cumulative only), and biological resources (cumulative only) that would occur under the proposed project.

Relationship to Project Objectives

This alternative would satisfy some of the project objective of assisting California in reducing GHG emissions. However, the two ESS (a component of the proposed 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 alternative would have an average insolation value similar to or greater than that of the project site 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 two ESS are not included.
- 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 250 MW of solar power.
- A distributed system of the scale of the project would be cost-prohibitive.

This alternative theoretically has the potential to generate of up to 250 MW of electricity but it would be used on the sites generating the power, and would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Additionally, this alternative does not include an ESS component. 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**, *Comparison of Alternatives*, there are a number of factors in selecting the environmentally superior alternative. An EIR must identify the environmentally superior alternative to the project. Alternative 1, the No Project Alternative, would be environmentally superior to the project on the basis of its minimization or avoidance of physical environmental impacts. However, *CEQA Guidelines* Section 15126.6(e)(2) states:

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

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Environmentally Superior Alternative is considered to be the No Ground-Mounted Utility-Solar Development Alternative. This alternative would avoid significant and unavoidable impacts to aesthetics, air quality, and biological resources. Impacts related to GHG emissions would be greater under this alternative due to the assumed lower efficiency of the distributed systems, which would not include solar tracking technology and it would not include ESS. This alternative could potentially result in greater impacts to land use and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, the No Ground-Mounted Utility-Solar Development 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 and traffic, 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 250 MW of distributed solar generated electricity; additionally, doing so would be economically infeasible. 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 Specific Plan and Zoning Build-Out Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

Chapter 7
Response to Comments

This chapter is being reserved for, and will be included with, the Final EIR.

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Chapter 8
Organizations and Persons Consulted

8.1 Federal

China Lake Naval Weapons Center

Edwards Air Force Base, Mission Sustainability Liaison

Natural Resource Conservation Service

U.S. Air Force

U.S. Army

U.S. Army Corp of Engineers, Regulatory Division

U.S. Bureau of Land Management

U.S. Department of Agriculture

U.S. Environmental Protection Agency Region IX Office

U.S. Fish and Wildlife Service

U.S. Marine Corps

U.S. Navy

U.S. Postal Service, Address Management Systems

8.2 State of California

California Air Resources Board

California Department of Fish & Wildlife, Fresno Region

California Department of Water Resources, San Joaquin District

California Department of Water Resources, Division of Land & Right-of-Way

California Energy Commission

California Native American Heritage Commission

California Public Utilities Commission, Energy Division

California Regional Water Quality Control Board, Lahontan Region

California State Clearinghouse

California State University Bakersfield - Library

Caltrans District 6

Caltrans District 9

State Department of Conservation, Director's Office

State Department of Conservation, Geologic Energy Management Division

State Department of Conservation, Office of Land Conservation

State Water Resources Control Board Division of Drinking Water

8.3 Regional and Local

Adams, Broadwell, Joseph & Cardozo

AES Midwest Wind Generation

Antelope Valley-East Kern Water Agency

Antelope Valley Resource Conservation District

AT&T California OSP Engineering/Right-of-Way

Bakersfield City Planning Department

Iberdrola Renewables

Inyo County Planning Department

Kern County Fire Department, David Witt, Fire Chief

Kern County Fire Department, Cary Wright, Fire Marshall

Kern County Library Beale Branch, Andie Sullivan

Kern County Library Beale Branch, Local History Room

Los Angeles County Regional Planning Department

Lozeau Drury LLP

Mojave Chamber of Commerce Mojave Town Council

Native American Heritage Council of Kern County

Pacific Crest Trail Association

Pacific Gas & Electric Company

Renewal Resources Group Holding Company

Bakersfield City Public Works Department

Beth Boyst, Pacific Crest Trail Program Manager

Beyond Coal Campaign/Sierra Club

California City Planning Department

California Highway Patrol Planning & Analysis Division

Center on Race, Poverty & the Environment

Center on Race, Poverty and the Environmental/CA Rural Legal Assistance Foundation

City of Arvin

City of Maricopa

City of McFarland

City of Ridgecrest

City of Shafter

City of Taft

City of Tehachapi

City of Wasco

Congentrix Sunshine, LLC

David Walsh

Defenders of Wildlife/Kim Delfino, California Director

Delano City Planning Department

East Kern Air Pollution Control District

EDP Renewables Company

Eight Bar Ranch

Fairmont Town Council

Fotowatio Renewable Ventures

Kern County Library Rosamond Branch

Kern County Parks and Recreation

Kelly Group

Kern Audubon Society

Kern County Administrative Officer

Kern County Council of Governments

Kern County Agriculture Department

Kern County Environmental Health Services Department

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/Operations and

Maintenance/Regulatory Monitoring and Reporting

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

Kern County Sheriff's Department

Kern County Superintendent of Schools

Kern County Water Agency

Kings County Planning Agency

Laborers' International Union of North America (LIUNA)

Los Angeles Audubon

Recurrent Energy

Robert Burgett

Rosamond Municipal Advisory Council

San Bernardino County Planning Department

San Luis Obispo County Planning Department

Santa Barbara County Resource Management Department

Sierra Club/Kern Kaweah Chapter

Southern Kern Unified School District

South San Joaquin Valley Archaeological Information Center

Southern California Edison

Southern California Edison Planning Department

Southern California Gas Company

Southern California Gas Company, Transportation Department

Structure Cast

Tehachapi Area Association of Realtors

Terra-Gen Power, LLC

The Gorman Law Firm

Tulare County Planning and Development Department

Ventura County Resource Management Agency, Planning Division

Wind Stream, LLC

8.4 Other

Chumash Council of Bakersfield

David Laughing Horse Robinson

Kern Valley Indian Council

Kern Valley Indian Council Historic Preservation Office

Kitanemuk & Yowlumne Tejon Indians

Santa Rosa Rancheria

Tejon Indian Tribe

Tubatulabals of Kern County

Tule River Indian Tribe

Chapter 9
List of Preparers

9.1 Lead Agency

Kern County Planning and Natural Resources Department

Lorelei H. Oviatt, AICP – Director

Craig M. Murphy – Assistant Director

Katrina A. Slayton – Advanced Planning Division Chief

Terrance Smalls – Supervising Planner

Randall Cates – Planner III

9.2 Technical Assistance

Environmental Science Associates (ESA)

Kimberly Comacho – Project Director

Arabesque Abdelwahed – Project Manager

Aaron Weiner – Deputy Project Manager

Eric Schniewind – Senior Geologist, Hydrologist, and Hazardous Materials Analyst

Olivia Chan – Senior Air Quality, Greenhouse Gas, Energy, and Noise Analyst

Jaclyn Catino-Davenport – Senior Biological Resource Analyst

Candace Ehringer – Senior Archaeologist

Michael Vader – Cultural Analyst

Shadde Rosenblum – Senior Traffic Analyst

Sylvia Palomera – Technical Analyst

Anna Millar – Technical Analyst

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Chapter 10
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Chapter 11
Acronyms and Abbreviations

AAQA	ambient air quality analysis
AB	Assembly Bill
AC	alternating current
ACHP	Advisory Council on Historic Preservation
ACOE	Army Corps of Engineers
AFB	Air Force Base
AF	acre-feet
AFY	acre-feet per year
ALUCP	Airport Land Use Compatibility Plan
ANSI	American National Standard Institute
APCD	Air Pollution Control District
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee's
APN	Assessor Parcel Number
AQAP	Air Quality Attainment Plan
AQMP	Air Quality Management Plan
ARB	Air Resources Board
ARP	accidental release prevention
ARPA	Archeological Resources Protection Act
ASCE	American Society of Civil Engineers
ASF	age sensitivity factor
AVAQMD	Antelope Valley Air Quality Management District
AVEK	Antelope Valley-East Kern
BLM	Bureau of Land Management
BMCM	bulk material control measures
BMPs	best management practices
BRTR	Biological Resources Technical Report
C&D	Construction and Demolition
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CaCO3	calcium carbonate

CAFE	corporate average fuel economy
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCAA	Clean Air Act of 1988
CCAP	Climate Change Action Plan
CCR	California Code of Regulations
CDC	Center for Disease Control
CDFW	California Department of Fish and Wildlife
CDNPA	California Desert Native Plants Act
CDOC	California Department of Conservation
CEC	California Energy Commission
CERS	California Environmental Reporting System
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CH4	methane
CHL	California Historical Landmarks
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CMA	Congestion Management Agency
CMP	Congestion Management Plan
CNDDB	Fish and Game Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO2	carbon dioxide
COG	Council of Governments
CPUC	California Public Utility Commission
CREC	controlled recognized environmental conditions

CRHR	California Register of Historical Resources
CRPC	California Rare Plant Rank
CSLC	California State Lands Commission
CSP	concentrated solar power
CUP	conditional use permit
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CWA	Clean Water Act
DAT	dual access tracker
dBA	decibel
DC	direct current
DEIR	draft environmental impact report
DI	drilling island
DOC	Department of Conservation
DOGGR	Division of Oil, Gas, and Geothermal Resources
DNL	Day-Night Average Sound Level
DPM	diesel particulate matter
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
ECCMP	Environmental and Construction Compliance Monitoring Plan
EIR	Environmental Impact Report
EKAPCD	Eastern Kern Air Pollution Control District
EMF	electromagnetic field
EMT	emergency medical technician
EO	Executive Order
EPA	Environmental Protection Agency
EPS	Emissions Performance Standard
ESA	Endangered Species Act
ESS	Energy Storage System
FAA	Federal Aviation Administration
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone

FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FR	Federal Register
FRA	Federal Responsibility Area
FRAP	Fire and Resource Assessment Program
FTA	Federal Transit Administration
FTE	full-time equivalent
FTIP	Federal Transportation Improvement Program
GDP	Gross Domestic Product
GHG	greenhouse gas
GIS	geographic information system
GO	general order
GPS	global positioning system
GSP	groundwater sustainability plan
GWP	Global Warming Potential
H2O	water
HAPs	total hazardous air pollutants
HCP	habitat conservation plan
HFC	hydrofluorocarbons
HHWE	Hazardous Waste Element
HM	habitat management
HMBP	Hazardous Materials Business Plan
HMMP	Hazardous Materials Management Plan
HRA	Health Risk Assessment
HREC	historical recognized environmental conditions
HSAT	horizontal single axis tracker
HSWA	Hazardous Solid Waste Act
HUD	Department of Housing and Urban Development
HVAC	heating/ventilation/air conditioning
HWMP	Hazardous Waste Management Plan
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan

IPCC	Intergovernmental Panel on Climate Change
IS/NOP	Initial Study/Notice of Preparation
IVIRWMP	Antelope Valley Integrated Regional Water Management Plan
KEDC	Kern Economic Development Cooperation
KCFD	Kern County Fire Department
KCGP	Kern County General Plan
KCOG	Kern Council of Governments
KCPD	Kern County Planning Department
KCSO	Kern County Sheriff's Department
KOP	Key Observation Point
LACM	Museum of Los Angeles County
LADWP	Los Angeles Department of Water and Power
LCFS	Low Carbon Fuel Standard
LID	low impact design
LLC	Limited Liability Corporation
LOS	Level of Service
LRA	local responsibility area
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MDAB	Mojave Desert Air Basin
MM	mitigation measure
MMRCP	Monitoring, Reporting, and Compliance Program
MOUs	Memoranda of Understanding
MRZs	Mineral Resource Zones
MT	metric tons
MV	medium voltage
MW	megawatts
NO_x	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCP	National Contingency Act
NCCP	Natural Communities Conservation Plan
NDFE	Nondisposal Facility Element

NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NF3	nitrogen trifluoride
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NOx	nitric oxide
NO2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NOP/IS	Notice of Preparation and Initial Study
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NR	natural resources
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
O3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OHV	off-highway vehicle
OSHA	Occupational Safety and Health Administrations
OPR	California Governor's Office of Planning and Research
PCE	passenger car equivalent
PCS	power conversion station
PCT	Pacific Crest Trail
PE	petroleum extraction
PFC	perfluorocarbons
PHI	points of historic interest
PL	platted lands
PM	particulate matter
PM10	Respirable Particulate Matter
PM2.5	Fine Particulate Matter

PPA	Power Purchase Agreement
PPV	peak particle velocity
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
PV	solar photovoltaic
PVC	polyvinyl chloride
PVSC	PV combining switchgear
R-2	Medium-density Residential
RACM	reasonably available control measures
RCRA	Resource Conservation and Recovery Act
RCSD	Rosamond Community Services District
RE	Recurrent Energy
REC	recognized environmental condition
RHNA	Regional Housing Needs Allocation
RMS	root mean square
ROGs	reactive organic gases
ROWs	Rights-of-Way
RPS	Renewable Portfolio Standard
RS	Residential Suburban
RTP	Regional Transportation Plan
RV	recreational vehicle
RWMG	Regional Water Management Group
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBBM	San Bernardino Base and Meridian
SBCM	San Bernardino County Museum
SC	sectionalizing cabinets
SCC	site control centers
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCC	site control center
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SDC	seismic design category
SDNHM	San Diego Natural History Museum

SF6	sulfur hexafluoride
SGHAT	Solar Glare Hazard Analysis Tool
SGMA	Sustainable Groundwater Management Agency
SHPO	State Historic Preservation Officer
SIPs	State Implementation Plans
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SKUSD	Southern Kern Unified School District
SLAMS	State and Local Air Monitoring Stations
SLF	sacred lands file
SMARA	Surface Mining and Reclamation Act of 1975
SO_x	sulfur oxides
SO2	sulfur dioxide
SPA	specific plan amendment
SPCC	Prevention, Control, and Countermeasure
SR	State Route
SRAs	State Responsibility Areas
SRRE	Source Reduction and Recycling Element
SSC	Species of Special Concern
SSJVIC	San Joaquin Valley Archaeological Information Center
STIP	State Transportation Improvement Program
SVP	Society of Vertebrate Paleontology
SWANCC	Solid Waste Agency of Northern Cook County
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TAZ	Traffic Analysis Zones
UBC	Uniform Building Code
UL	Underwriters Laboratory
USC	United States Code
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USPS	United States Postal Service

UST	underground storage tank
UV	ultraviolet
VMT	vehicle miles traveled
VOCs	volatile organic compounds
VRM	Visual Resource Management
WEMO	West Mojave Plan
WRCC	Western Regional Climate Center
WSA	water supply assessment
WSSP	Willow Springs Specific Plan
ZCC	zone change
ZEV	zero-emissions vehicle

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