# Draft Environmental Impact Report

SCH# 2019090305

## Volume 1

**Chapters 1 through 10** 

### PASTORIA SOLAR PROJECT

by Pastoria Solar Energy, LLC (PP19149)

Conditional Use Permit No. 9, Map No. 219 Williamson Act Contract Cancellation No. 19-02 General Plan Amendment No. 10, Map 219



Kern County Planning and Natural Resources Department Bakersfield, California

June 2020



#### PLANNING AND NATURAL RESOURCES DEPARTMENT

Planning Community Development Administrative Operations

June 25, 2020

ADDRESSEE LIST (See Distribution List)

**File:** CUP 9, Map 219; WALUC Cancellation 19-02; GPA 10, Map 219

# Re: Draft Environmental Impact Report for the Pastoria Solar Project by Pastoria Solar Energy, LLC (SCH #2019090305)

Dear Interested Party:

Kern County has prepared a Draft Environmental Impact Report (Draft EIR) for the above-noted land use applications to allow for the construction and operation of a solar photovoltaic power generating facility and associated facilities that would generate a combined total of approximately 115 megawatts (MW) of renewable electrical energy and up to 80 MW of energy storage capacity on approximately 650 acres of privately-owned land in unincorporated Kern County.

The project site is located approximately 3 miles east of the unincorporated community of Grapevine, approximately 5 miles southeast of the unincorporated community of Wheeler Ridge, and approximately 5 miles northeast of the unincorporated community of Lebec. Surrounding land uses include undeveloped grazing land and vineyards to the north and east, and undeveloped grazing land to the south and west of the project site. Development in the area consists of the Pastoria Energy Facility, the Griffith Aggregate Mine, the California Aqueduct, and the Department of Water Resources' Edmonston Pumping Plant. The site is located in Sections 11, 12, 13, 14, Township 10 North, Range 19 West (SBB&M), County of Kern, State of California.

The project proponent is requesting: (a) One (1) Conditional Use Permit (CUP), to allow for the construction and operation of a 115 MW solar photovoltaic electrical generating facility with up to 80 MW of energy storage (Section 19.12.030.G) in an A Zone District (CUP No. 9, Map No. 219); (b) One Williamson Act Land Use Contract Cancellation on approximately 650 acres (WALUC Cancellation 19-02); and (c) Amendment to the Kern County General Plan to remove section and mid-section line road reservations as follows; the Section line between Section 11, T10 N R19 W, and Section 12, T10 N R19 W; the Section line between Section 14, T10 N R19 W, and Section 13, T10 N R19 W; the Section line between Section 11, T10 N R19 W, and Section 14, T10 N R19 W; the Section line between Section 13, T10 N R19 W, and Section 12, T10 N R19 W; the south half of the north-south mid-section line of Section 11, T10 N R19 W; the east half of the east-west mid-section line of Section 11, T10 N R19 W; the south half of the north-south mid-section line of Section 12, T10 N R19 W; the west half of the east-west mid-section line of Section 12, T10 N R19 W; the north half of the north-south mid-section line of Section 14, T10 N R19 W; the east half of the east-west mid-section line of Section 14, T10 N R19 W; the north half of the north-south midsection line of Section 13, T10 N R19 W; the west half of the east-west mid-section line of Section 13, T10 N R19 W (General Plan Amendment No. 10, Map 219). The project's permanent facilities would include service roads, overhead and underground transmission lines, a step-up conversion station, project substations, energy storage facilities, perimeter security fencing, and generational tie lines.

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

If we have not received a reply from you by August 10, 2020, at 5:00 P.M., we will assume that you have no comments regarding this Draft EIR.

Should you have any questions regarding this project, please do not hesitate to contact me at (661) 862-8629 or via email at hooverc@kerncounty.com

Sincerely, Cindi Hoover, Planner 3

Cindi Hoover, Planner 3 Advanced Planning Division

GPA #10; CUP #9, Map #219 WO #PP19149 (EIR 03-19) I:\Planning\WORKGRPS\WP\LABELS\e ir03-19ceh.nop.doc Sc 07/23/19

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

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

City of Shafter 336 Pacific Avenue Shafter, CA 93263

City of Wasco 764 E Street Wasco, CA 93280

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

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

U.S. Bureau of Land Management Caliente/Bakersfield 3801 Pegasus Drive Bakersfield, CA 93308-6837

U. S. Fish & Wildlife Service Division of Ecological Services 2800 Cottage Way #W-2605 Sacramento, CA 95825-1846

U.S. Army Corps of Engineers Regulatory Division 1325 "J" Street, #1350 Sacramento, CA 95814-2920 City of Arvin P.O. Box 548 Arvin, CA 93203

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

City of McFarland 401 West Kern Avenue McFarland, CA 93250

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

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

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

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

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

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

State Air Resources Board Stationary Resource Division P.O. Box 2815 Sacramento, CA 95812 Bakersfield City Planning Dept 1715 Chester Avenue Bakersfield, CA 93301

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

City of Ridgecrest 100 West California Avenue Ridgecrest, CA 93555

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

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

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

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

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

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

So. San Joaquin Valley Arch Info Ctr California State University of Bkfd 9001 Stockdale Highway Bakersfield, CA 93311 Caltrans/Dist 6 Planning/Land Bank Bldg. P.O. Box 12616 Fresno, CA 93778

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

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

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

Kern County Public Works Department/ Building & Development/Floodplain

Kern County Fire Dept Cary Wright, Fire Marshall

Kern County Library Arvin Branch 201 Campus Drive Arvin, CA 93203

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

General Shafter School Dist 1825 Shafter Road Bakersfield, CA 93313

KernCOG 1401 19th Street - Suite 300 Bakersfield, CA 93301 State Dept of Conservation Geologic Energy Management 4800 Stockdale Highway, Ste 108 Bakersfield, CA 93309

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

California Regional Water Quality Control Board/Central Valley Region 1685 E Street Fresno, CA 93706-2020

Kern County Agriculture Department

Kern County Public Works Department/ Building & Development/Survey

Kern County Library/Beale Local History Room

Kern County Parks & Recreation

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

Kern High School Dist 5801 Sundale Avenue Bakersfield, CA 93309

Local Agency Formation Comm/LAFCO 5300 Lennox Avenue, Suite 303 Bakersfield, CA 93309 California Energy Commission James W. Reed, Jr. 1516 Ninth Street Mail Stop 17 Sacramento, CA 95814

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

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

Kern County Airports Department

Kern County Env Health Services Department

Kern County Library/Beale Andie Sullivan

Kern County Sheriff's Dept Administration

Arvin Union School Dist 737 Bear Mountain Blvd Arvin, CA 93203

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

Wheeler Ridge-Maricopa Water Dist 12109 Highway 166 Bakersfield, CA 93313-9630 Kern County Water Agency P.O. Box 58 Bakersfield, CA 93302-0058

Adams, Broadwell, Joseph & Cardozo Attention: Sheila Sannadan 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080

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

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

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

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

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

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

Eric Anderson 1309 Leisure Lane Frazier Park, CA 93225

Metro Water Dist of So CA Ms. Rebecca De Leon Environmental Planning Team 700 N. Alameda Street, US3-230 Los Angeles, CA 90012 San Joaquin Valley Air Pollution Control District 1990 East Gettysburg Avenue Fresno, CA 93726

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

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

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

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

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

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

San Fernando Band of Mission Indians Attn: John Valenzuela, Chairperson P.O. Box 221838 Newhall, CA 91322

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

Terra-Gen Power, LLC Steve Yatsko 11512 El Camino Real, Suite 370 San Diego, CA 92130-3025 Kern Mosquito Abatement Dist 4705 Allen Road Bakersfield, CA 93314

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

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

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

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

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

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

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

Mary Ann Lockhart P.O. GG Frazier Park, CA 93225

Lozeau Drury LLP 410 – 12th Street, Suite 250 Oakland, CA 94607 Sarah K. Friedman Beyond Coal Campaign/Sierra Club 1417 Calumet Avenue Los Angeles, CA 90026

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

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

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

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

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

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

David Walsh 22941 Banducci Road Tehachapi, CA 93561

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

State Dept of Conservation Geologic Energy Management Mario Ortiz 4800 Stockdale Highway, Ste 108 Bakersfield, CA 93309 Southern California Edison P.O. Box 410 Long Beach, CA 90801

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

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

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

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

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

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

Mountain Enterprise Attn: Patric Hedlund P.O. Box 610 Frazier Park, CA 93225

Caltrans/Dist 6 Planning/Land Bank Bldg. Lorena Mendibles P.O. Box 12616 Fresno, CA 93778 U.S. Army Attn: Philip Crosbie, Chief Strategic Plans, S3, NTC P.O. Box 10172 Fort Irwin, CA 92310

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

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

EDP Renewables Company 53 SW Yamhill Street Portland, OR 97204

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

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

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

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

State Department of Conservation Division of Land Resource Protection Monique Wilber 801 K Street, M14-15 Sacramento, CA 95814

Department of Water Resources Division of Operations and Maintenance Leroy Ellinghouse, Chief 1416 Ninth Street, Room 641-1 Sacramento, CA 95814 San Joaquin Valley Air Pollution Control District Arnaud Marjollet 1990 East Gettysburg Avenue Fresno, CA 93726

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

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

A public hearing has been scheduled with the Kern County Planning Commission to receive comments on the document on: **September 10, 2020**, at 7:00 p.m. or soon thereafter, Chambers of the Board of Supervisors, First Floor, Kern County Administrative Center, 1115 Truxtun Avenue, Bakersfield, California.

The comment period for this document closes on **August 10, 2020**. Testimony at future public hearings may be limited to those issues raised during the public review period either orally or submitted in writing by 5:00 p.m. the day the comment period closes.

**Project Title:** Pastoria Solar Project by Pastoria Solar Energy, LLC (PP19149); Conditional Use Permit No. 9, Map 219; Williams Act Land Use Contract Cancellation 19-02; and General Plan Amendment 10, Map 219 (Circulation).

**Project Location:** The project site is located approximately 3 miles east of the unincorporated community of Grapevine, approximately 5 miles southeast of the unincorporated community of Wheeler Ridge, and approximately 5 miles northeast of the unincorporated community of Lebec. Surrounding land uses include undeveloped grazing land and vineyard to the north and east, and undeveloped grazing land to the south and west of the project site. Development in the area consists of the Pastoria Energy Facility, the Griffith Aggregate Mine, the California Aqueduct, and the Department of Water Resources' Edmonston Pumping Plant. The site is located in Sections 11, 12, 13, 14, Township 10 North, Range 19 West (SBB&M), County of Kern, State of California.

Project Description: The project proponent is requesting: (a) One (1) Conditional Use Permit (CUP), to allow for the construction and operation of a 115 MW solar photovoltaic electrical generating facility with up to 80 MW of energy storage (Section 19.12.030.G) in an A Zone District (CUP No. 9, Map No. 219); (b) One Williamson Act Land Use Contract Cancellation on approximately 650 acres (WALUC Cancellation 19-02); and (c) Amendment to the General Plan to remove section and mid-section line road reservations as follows; the Section line between Section 11, T10 N R19 W, and Section 12, T10 N R19 W; the Section line between Section 14, T10 N R19 W, and Section 13, T10 N R19 W; the Section line between Section 11, T10 N R19 W, and Section 14, T10 N R19 W; the Section line between Section 13, T10 N R19 W, and Section 12, T10 N R19 W; the south half of the north-south mid-section line of Section 11, T10 N R19 W; the east half of the east-west mid-section line of Section 11, T10 N R19 W; the south half of the north-south mid-section line of Section 12, T10 N R19 W; the west half of the east-west mid-section line of Section 12, T10 N R19 W; the north half of the north-south mid-section line of Section 14, T10 N R19 W; the east half of the east-west midsection line of Section 14, T10 N R19 W; the north half of the north-south mid-section line of Section 13, T10 N R19 W: the west half of the east-west mid-section line of Section 13, T10 N R19 W (General Plan Amendment No, 10, Map 219). The project's permanent facilities would include service roads, overhead and underground transmission lines, a step-up conversion station, project substations, energy storage facilities, perimeter security fencing, and generational tie lines.

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

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

For further information, please contact Cindi Hoover, Planner 3, at (661) 862-8629 or hooverc@kerncounty.com.

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

To be published once only on <u>next available date and as soon as possible</u> <u>The Bakersfield Californian</u> <u>Mountain Enterprise</u>

clh (6/18/2020)

cc: County Clerk (2) (with fee) Environmental Status Board Sierra Club/Kern Kaweah Chapter LiUNA Lozeau Drury, LLP California Native Plant Society/Kern Chapter Kern County Archaeological Society Native American Heritage Pres. Council/Kern County Center on Race, Poverty and Environment (2) Supervisorial District No. 2 GPA #10; CUP #9, Map #219 WO PP19149 (EIR 03-19) Letters1 Sc 07/23/19

24131016004 TEJON RANCH CO PO BOX 1000 LEBEC CA 932431000 24122010000 (**MR**) DRILLING & PRODUCTION CO 4520 CALIFORNIA AV # 310 BAKERSFIELD CA 933091190

#### **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# 2019090305

Project Title: Pastoria Solar P	roject by Pastoria Solar Energ	y, LLC			
Lead Agency: Kern County Pla	Contact Person:	Cindi Hoove	r		
Mailing Address: 2700 "M" Str		Phone: (661) 86	52-8629		
City: Bakersfield	Zip: 93301-2323	County: Kern			
Project Location: County: K Cross Streets: Edmonston Pump	ern	City/Nearest Com	munity: Grapevine		
				Z	Ip Code: <u>93203</u>
Lat. / Long.: <u>34<sup>4</sup> 37 18.49119N</u>	118-31-19.62314W	1	Total Acres: 650		
Assessor's Parcel No.: 241-310-	08, 10, 15, 17	Section: <u>11,12,13,14</u>	Twp.: 10N	Range: 19W	Base: SBB&M
within 2 Miles: State Hwy #:		Waterways: Califor	nia Aqueduct		
Airports:		Railways:		Schools:	
Document Type:					
CEQA: NOP Early Cons Neg Dec Mit Neg Dec	Draft EIR Supplement/Subsequent (Prior SCH No.) Other	NEPA: nt EIR	<ul> <li>NOI</li> <li>EA</li> <li>Draft EIS</li> <li>FONSI</li> </ul>	Other: [ [ [	Joint Document Final Document Other
Local Action Type:					
<ul> <li>General Plan Update</li> <li>General Plan Amendment</li> <li>General Plan Element</li> <li>Community Plan</li> </ul>	<ul> <li>Specific Plan</li> <li>Master Plan</li> <li>Planned Unit Develops</li> <li>Site Plan</li> </ul>	ment Rezond Prezon Land D	e e ermit Division (Subdivisio	on, etc.)	Annexation Redevelopment Coastal Permit Other WALUC
Development Type:					
Residential: Units     Office: Sq.ft.     Commercial: Sq.ft.	Acres Employees	Water Fac	ation: Type		MGD
Industrial: Sq.ft.     Educational     Recreational	Acres Employees		Type Solar atment: Type s Waste: Type	r	MW <u>115</u> MGD
			orgy Storage (60 IVI		
Project Issues Discussed in Doc	ument:				
<ul> <li>Aesthetic/Visual</li> <li>Agricultural Land</li> <li>Air Quality</li> <li>Archeological/Historical</li> <li>Biological Resources</li> <li>Coastal Zone</li> <li>Drainage/Absorption</li> <li>Economic/Jobs</li> </ul>	<ul> <li>Fiscal</li> <li>Flood Plain/Flooding</li> <li>Forest Land/Fire Hazard</li> <li>Geologic/Seismic</li> <li>Minerals</li> <li>Noise</li> <li>Population/Housing Balance</li> <li>Public Services/Facilities</li> </ul>	<ul> <li>☐ Recreation/Parl</li> <li>☐ Schools/Univer</li> <li>⊠ Septic Systems</li> <li>☐ Sewer Capacity</li> <li>⊠ Soil Erosion/Ca</li> <li>⊠ Solid Waste</li> <li>≥ ⊠ Toxic/Hazardoi</li> <li>⊠ Traffic/Circulation</li> </ul>	ks rsities / ompaction/Grading us tion	Vege Wate: Wate: Wetla Wildl Grow Land Cumu	tation r Quality r Supply/Groundwater and/Riparian life th Inducing Use ulative Effects

Present Land Use/Zoning/General Plan Designation:

Undeveloped Grazing Land. Kern County General Plan: 8.1 (Intensive Agriculture); 8.3 (Extensive Agriculture); 8.4 (Mineral and Petroleum); 2.1 (Flood Hazard), Zoning:

A (Exclusive Agriculture).

Project Description: The project includes a request for land use entitlements necessary to facilitate the future construction and operation of a solar facility and associated infrastructure to generate a combined 115 megawatts (MW) of renewable electrical energy and 80 MW of energy storage, on approximately 650 acres of privately-owned land. Implementation of the project as proposed would require: a) Conditional Use Permit (CUP) No. 9, Map No. 219; b) Williamson Act Land Use Contract Cancellation No. 19-02; and c) General Plan Amendment (GPA) No. 10, Map No. 219 (Circulation).

**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	1.	Office of Public School Construction
x	CalFire	S	Parks & Recreation
S	Caltrans District # 6		Pesticide Regulation, Department of
S	Caltrans Division of Aeronautics	S	Public Utilities Commission
	Caltrans Planning (Headquarters)	S	Regional WQCB # Central
	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
x	Conservation, Department of		Santa Monica Mountains Conservancy
	Corrections, Department of		State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of	ί	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		Other
	Integrated Waste Management Board	5. <del>.</del>	Other
S	Native American Heritage Commission		
Local I	Public Review Period (to be filled in by lead agency)		
Starting	g Date June 25.2020	Ending	Date August 10, 2020
Trad			
Lead A	Agency (Complete II applicable):		
Consul	ting Firm:	Applic	ant:
Addres	s:	Addres	S:
City/St	ate/Zip:	City/St	ate/Zip:
Contac	t:	Phone:	
Phone:		$\sim$	
		41	
Signati	ure of Lead Agency <u>Representative</u> :	Planner I	Date: <u>06/25/2020</u>

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

# Draft Environmental Impact Report

SCH# 2019090305

## Volume 1

**Chapters 1 through 10** 

### PASTORIA SOLAR PROJECT

by Pastoria Solar Energy, LLC (PP19149)

Conditional Use Permit No. 9, Map No. 219 Williamson Act Contract Cancellation No. 19-02 General Plan Amendment No. 10, Map 219



Kern County Planning and Natural Resources Department Bakersfield, California

June 2020

#### Page

Chapter 1       Executive Summary       1-1         1.1       Introduction       1-1         1.2       Project Summary       1-2         1.3       Relationship of the Project to Other Solar Projects       1-4         1.4       Purpose and Use of the EIR       1-4         1.5       Project Overview       1-5         1.6       Environmental Impacts       1-10         1.7       Alternatives to the Project       1-16         1.8       Areas of Controversy       1-25         1.9       Issues to Be Resolved       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       2-12         2.1       Intent of the California Environmental Quality Act       2-11         2.3       Terminology       2-2         2.4       Decision-Making Process       2-44         2.5       Format and Content       2-48         2.6       Responsible and Trustee Agencies       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources       2-13         Chapter 3       Project Description       3-13         3.1<		_		
1.1       Introduction       1-1         1.2       Project Summary.       1-2         1.3       Relationship of the Project to Other Solar Projects.       1-4         1.4       Purpose and Use of the EIR.       1-4         1.5       Project Overview.       1-5         1.6       Environmental Impacts       1-10         1.7       Alternatives to the Project.       1-16         1.8       Areas of Controversy.       1-25         1.9       Issues to Be Resolved.       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-24         2.1       Intend of the California Environmental Quality Act       2-1         2.1       Intend of the California Environmental Quality Act       2-1         2.1       Purpose of this Environmental Impact Report       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies       2-12         2.8       Sources       2-13         Chapter 3       Project Description	Chapter 1	Execut	ive Summary	1-1
1.2       Project Summary.       1-2         1.3       Relationship of the Project to Other Solar Projects.       1-4         1.4       Purpose and Use of the EIR.       1-4         1.5       Project Overview.       1-5         1.6       Environmental Impacts.       1-10         1.7       Alternatives to the Project.       1-16         1.8       Areas of Controversy.       1-25         1.9       Issues to Be Resolved.       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         1.10       Summary of Environmental Impact Report       2-1         2.1       Intent of the California Environmental Quality Act       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Description       3-1         3.3       Proj		1.1	Introduction	1-1
1.3       Relationship of the Project to Other Solar Projects       1-4         1.4       Purpose and Use of the EIR.       1-4         1.5       Project Overview       1-5         1.6       Environmental Impacts       1-10         1.7       Alternatives to the Project       1-16         1.8       Areas of Controversy       1-25         1.9       Issues to Be Resolved       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         1.10       Summary of Environmental Impact Report       2-11         2.1       Intend the California Environmental Quality Act       2-11         2.2       Purpose of this Environmental Impact Report       2-12         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies       2-10         2.7       Introduction       3-1         3.1       Introduction       3-1         3.2       Project Description       3-1         3.3       Project Coloration       3-1         3.4       Sources       3-12         3.5       Land Use and Zoning       3-12         3.6		1.2	Project Summary	
1.4       Purpose and Use of the EIR.       1.4         1.5       Project Overview.       1.5         1.6       Environmental Impacts       1.10         1.7       Alternatives to the Project       1.10         1.7       Alternatives to the Project       1.25         1.9       Issues to Be Resolved       1.26         1.10       Summary of Environmental Impacts and Mitigation Measures       1.26         Chapter 2       Introduction       2-1         2.1       Intent of the California Environmental Quality Act       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content.       2-8         2.6       Responsible and Trustee Agencies.       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Coation       3-1         3.4       Environmental Setting       3-6         3.4       Environmental Setting       3-12         3.6       Project Characteristics       3-17         3.8       Entilements Required       3-26 <td></td> <td>1.3</td> <td>Relationship of the Project to Other Solar Projects</td> <td>1-4</td>		1.3	Relationship of the Project to Other Solar Projects	1-4
1.5       Project Overview       1-5         1.6       Environmental Impacts       1-10         1.7       Alternatives to the Project       1-16         1.8       Areas of Controversy.       1-25         1.9       Issues to Be Resolved       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-21         2.1       Interduction       2-1         2.2       Purpose of this Environmental Impact Report       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies       2-10         2.7       Incorporation by Reference       2-13         2.8       Sources       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Colocation       3-1         3.4       Environmental Setting       3-12         3.6       Proposed Project.       3-26		1.4	Purpose and Use of the EIR	1-4
1.6       Environmental Impacts       1-10         1.7       Alternatives to the Project       1-16         1.8       Areas of Controversy.       1-25         1.9       Issues to Be Resolved       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         Chapter 2       Introduction       2-1         2.1       Intent of the California Environmental Quality Act       2-1         2.2       Purpose of this Environmental Impact Report       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Coation       3-1         3.3       Project Coation       3-12         3.4       Environmental Setting       3-6         3.5       Land U		1.5	Project Overview	1-5
1.7       Alternatives to the Project.       1-16         1.8       Areas of Controversy.       1-25         1.9       Issues to Be Resolved.       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         Chapter 2       Introduction       2-1         2.1       Intent of the California Environmental Quality Act       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content.       2-8         2.6       Responsible and Trustee Agencies.       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources.       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Doctives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning.       3-12         3.6       Project Characteristics       3-16         3.7       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27		1.6	Environmental Impacts	1-10
1.8       Areas of Controversy.       1-26         1.9       Issues to Be Resolved.       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures.       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures.       1-26         2.1       Introduction       2-1         2.2       Purpose of this Environmental Impact Report       2-1         2.3       Terminology.       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content.       2-8         2.6       Responsible and Trustee Agencies.       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources.       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Characteristics       3-16         3.4       Environmental Setting       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics.       4-11         4.1.1       Introduction       4-12         4.1.2       Environmental Setting       4		1.7	Alternatives to the Project	1-16
1.9       Issues to Be Resolved       1-26         1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         Chapter 2       Introduction       2-1         2.1       Intent of the California Environmental Quality Act       2-1         2.2       Purpose of this Environmental Impact Report       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Objectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-12         3.6       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       4-1-1		1.8	Areas of Controversy	
1.10       Summary of Environmental Impacts and Mitigation Measures       1-26         Chapter 2       Introduction       2-1         2.1       Intent of the California Environmental Quality Act       2-1         2.2       Purpose of this Environmental Impact Report       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Objectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-12         3.6       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       41-1         4.1.1       Introduction       41-1		1.9	Issues to Be Resolved	1-26
Chapter 2       Introduction       2-1         2.1       Intent of the California Environmental Quality Act       2-1         2.2       Purpose of this Environmental Impact Report       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Objectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-12         3.6       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       41-1         4.1.2       Environmental Setting       41-2         4.1.3       Introduction       41-1         4.1.4       Hanguets and Mitigation Measures       41-4		1.10	Summary of Environmental Impacts and Mitigation Measures	1-26
2.1Intent of the California Environmental Quality Act2-12.2Purpose of this Environmental Impact Report2-12.3Terminology2-22.4Decision-Making Process2-42.5Format and Content2-82.6Responsible and Trustee Agencies.2-102.7Incorporation by Reference2-122.8Sources2-13Chapter 3Project Description3-13.1Introduction3-13.2Project Column3-13.3Project Objectives3-63.4Environmental Setting3-63.5Land Use and Zoning3-123.6Proposed Project3-163.7Project Characteristics3-173.8Entitlements Required3-263.9Cumulative Projects3-27Section 4.1Aesthetics41-24.1.4Impacts and Mitigation Measures41-64.1.4Impacts and Mitigation Measures42-14.2.1Introduction42-14.2.3Regulatory Setting42-14.2.4Homacts and Mitigation Measures42-14.2.3Regulatory Setting42-14.2.4Homacts and Mitigation Measures42-14.2.3Regulatory Setting42-14.2.4Homacts and Mitigation Measures42-14.2.4Homacts and Mitigation Measures42-1	Chapter 2	Introd	uction	2-1
2.2       Purpose of this Environmental Impact Report       2-1         2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Objectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-12         3.6       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       4-1-1         4.1.2       Environmental Setting       4-1-2         4.1.3       Regulatory Setting       4-1-6         4.1.4       Impacts and Mitigation Measures       4-1-8         Section 4.2       Agriculture and Forestry Resources       4-2-1	•	2.1	Intent of the California Environmental Quality Act	2-1
2.3       Terminology       2-2         2.4       Decision-Making Process       2-4         2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies.       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Cobjectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-12         3.6       Propect Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       4-1-1         4.1.1       Introduction       4-1-1         4.1.2       Environmental Setting       4-1-2         4.1.3       Regulatory Setting       4-1-2         4.1.4       Impacts and Mitigation Measures       4-1-3         4.2.1       Introduction       4-1-1         4.2.2       Environmental Setting		2.2	Purpose of this Environmental Impact Report	
2.4Decision-Making Process2-42.5Format and Content2-82.6Responsible and Trustee Agencies2-102.7Incorporation by Reference2-122.8Sources2-13Chapter 3 <b>Project Description</b> 3-13.1Introduction3-13.2Project Location3-13.3Project Objectives3-63.4Environmental Setting3-63.5Land Use and Zoning3-123.6Proposed Project3-163.7Project Characteristics3-173.8Entitlements Required3-263.9Cumulative Projects3-27Section 4.1Aesthetics41-14.1.1Introduction41-14.1.2Environmental Setting41-64.1.4Impacts and Mitigation Measures41-8Section 4.2Agriculture and Forestry Resources42-14.2.1Introduction42-14.2.2Environmental Setting42-14.2.3Regulatory Setting42-34.2.4Impacts and Mitigation Measures42-34.2.4Impacts and Mitigation Measures42-34.2.4Impacts and Mitigation Measures42-14.2.3Regulatory Setting42-34.2.4Impacts and Mitigation Measures42-34.2.4Impacts and Mitigation Measures42-34.2.4Impacts and Mitigation Measures42-3		2.3	Terminology	
2.5       Format and Content       2-8         2.6       Responsible and Trustee Agencies.       2-10         2.7       Incorporation by Reference       2-12         2.8       Sources       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Objectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-12         3.6       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.7       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       41-1         4.1.1       Introduction       41-1         4.1.2       Environmental Setting       41-2         4.1.3       Regulatory Setting       41-2         4.1.4       Impacts and Mitigation Measures       41-1         4.2.1       Introduction       42-1         4.2.2       Environmental Setting<		2.4	Decision-Making Process	
2.6Responsible and Trustee Agencies.2-102.7Incorporation by Reference2-122.8Sources.2-13Chapter 3 <b>Project Description3-1</b> 3.1Introduction3-13.2Project Location3-13.3Project Objectives3-63.4Environmental Setting3-63.5Land Use and Zoning3-123.6Proposed Project.3-163.7Project Characteristics3-173.8Entitlements Required3-263.9Cumulative Projects3-27Section 4.1Aesthetics.41-14.1.2Environmental Setting41-24.1.3Regulatory Setting.41-64.1.4Impacts and Mitigation Measures42-14.2.1Introduction42-14.2.2Environmental Setting42-14.2.3Regulatory Setting.42-14.2.4Imarcts and Mitigation Measures42-114.2.3Regulatory Setting.42-14.2.4Imarcts and Mitigation Measures42-114.2.3Regulatory Setting.42-114.2.4Imarcts and Mitigation Measures42-114.2.4Imarcts and Mitigation Measures42-114.2.4Imarcts and Mitigation Measures42-11		2.5	Format and Content	
2.7Incorporation by Reference2-122.8Sources2-13Chapter 3Project Description3-13.1Introduction3-13.2Project Location3-13.3Project Objectives3-63.4Environmental Setting3-63.5Land Use and Zoning3-123.6Proposed Project3-163.7Project Characteristics3-173.8Entitlements Required3-263.9Cumulative Projects3-27Section 4.1Aesthetics4.1-14.1.2Environmental Setting4.1-24.1.3Regulatory Setting4.1-64.1.4Impacts and Mitigation Measures4.2-14.2.2Environmental Setting4.2-14.2.3Regulatory Setting4.2-14.2.4Imroduction4.2-14.2.3Regulatory Setting4.2-14.2.4Imroduction4.2-14.2.3Regulatory Setting4.2-14.2.4Immacts and Mitigation Measures4.2-14.2.3Regulatory Setting4.2-14.2.4Immacts and Mitigation Measures4.2-1		2.6	Responsible and Trustee Agencies	
2.8       Sources.       2-13         Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Objectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-12         3.6       Proposed Project.       3-16         3.7       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics.       4.1-1         4.1.1       Introduction       4.1-1         4.1.2       Environmental Setting       4.1-2         4.1.3       Regulatory Setting       4.1-2         4.1.4       Impacts and Mitigation Measures       4.1-3         Section 4.2       Agriculture and Forestry Resources       4.2-1         4.2.1       Introduction       4.2-1         4.2.2       Environmental Setting       4.2-1         4.2.3       Regulatory Setting       4.2-1         4.2.4       Impacts and Mitigation Measures       4.2-1         4.2.3		2.7	Incorporation by Reference	
Chapter 3       Project Description       3-1         3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Objectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-12         3.6       Proposed Project       3-16         3.7       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       41-1         4.1.1       Introduction       41-1         4.1.2       Environmental Setting       41-2         4.1.3       Regulatory Setting       41-6         4.1.4       Impacts and Mitigation Measures       41-18         Section 4.2       Agriculture and Forestry Resources       42-11         4.2.2       Environmental Setting       42-1         4.2.3       Regulatory Setting       42-1         4.2.4       Lint oduction       42-1         4.2.3       Regulatory Setting       42-1         4.2.4       Impacts and Mitigation Measures       42-3		2.8	Sources	2-13
3.1       Introduction       3-1         3.2       Project Location       3-1         3.3       Project Objectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-16         3.7       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       4.1-1         4.1.1       Introduction       4.1-1         4.1.2       Environmental Setting       4.1-2         4.1.3       Regulatory Setting       4.1-6         4.1.4       Impacts and Mitigation Measures       4.2-1         4.2.1       Introduction       4.2-1         4.2.2       Environmental Setting       4.2-1         4.2.3       Regulatory Setting       4.2-1         4.2.3       Regulatory Setting       4.2-1         4.2.3       Regulatory Setting       4.2-1         4.2.3       Regulatory Setting       4.2-1         4.2.4       Impacts and Mitigation Measures       4.2-1	Chaptor 2	Droioc	+ Description	2 1
3.1Introduction3-13.2Project Location3-13.3Project Objectives3-63.4Environmental Setting3-63.5Land Use and Zoning3-123.6Proposed Project3-163.7Project Characteristics3-173.8Entitlements Required3-263.9Cumulative Projects3-27Section 4.1Aesthetics4.1-14.1.1Introduction4.1-14.1.2Environmental Setting4.1-24.1.3Regulatory Setting4.1-64.1.4Impacts and Mitigation Measures4.2-14.2.1Introduction4.2-14.2.2Environmental Setting4.2-14.2.4Impacts and Mitigation Measures4.2-14.2.4Impacts and Mitigation Measures4.2-14.2.4Impacts and Mitigation Measures4.2-14.2.4Impacts and Mitigation Measures4.2-1	Chapter 5		Introduction	<b>1</b>
3.2Project Education3-13.3Project Objectives3-63.4Environmental Setting3-123.6Proposed Project3-163.7Project Characteristics3-173.8Entitlements Required3-263.9Cumulative Projects3-27Section 4.1Aesthetics4.1-14.1.1Introduction4.1-14.1.2Environmental Setting4.1-24.1.3Regulatory Setting4.1-64.1.4Impacts and Mitigation Measures4.2-14.2.1Introduction4.2-14.2.3Regulatory Setting4.2-34.2.4Impacts and Mitigation Measures4.2-14.2.3Regulatory Setting4.2-34.2.4Impacts and Mitigation Measures4.2-14.2.3Regulatory Setting4.2-34.2.4Impacts and Mitigation Measures4.2-1		5.1 2.2	Dreiget Location	
3.3       Project Objectives       3-6         3.4       Environmental Setting       3-6         3.5       Land Use and Zoning       3-12         3.6       Proposed Project       3-16         3.7       Project Characteristics       3-17         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       4.1-1         4.1.1       Introduction       4.1-1         4.1.2       Environmental Setting       4.1-2         4.1.3       Regulatory Setting       4.1-6         4.1.4       Impacts and Mitigation Measures       4.2-1         4.2.1       Introduction       4.2-1         4.2.2       Environmental Setting       4.2-1		3.Z	Project Location	
3.4Environmental Setting3-63.5Land Use and Zoning3-123.6Proposed Project3-163.7Project Characteristics3-173.8Entitlements Required3-263.9Cumulative Projects3-27Section 4.1Aesthetics4.1-14.1.1Introduction4.1-14.1.2Environmental Setting4.1-24.1.3Regulatory Setting4.1-64.1.4Impacts and Mitigation Measures4.1-8Section 4.2Agriculture and Forestry Resources4.2-14.2.1Introduction4.2-14.2.3Regulatory Setting4.2-34.2.4Impacts and Mitigation Measures4.2-1		3.3 2.4	Project Objectives	
3.5Land Use and Zoning3-123.6Proposed Project.3-163.7Project Characteristics3-173.8Entitlements Required3-263.9Cumulative Projects3-27Section 4.1Aesthetics.4.1-14.1.1Introduction4.1-14.1.2Environmental Setting4.1-24.1.3Regulatory Setting.4.1-64.1.4Impacts and Mitigation Measures4.1-8Section 4.2Agriculture and Forestry Resources4.2-14.2.1Introduction4.2-14.2.2Environmental Setting4.2-14.2.3Regulatory Setting.4.2-34.2.4Impacts and Mitigation Measures4.2-14.2.3Regulatory Setting.4.2-34.2.4Impacts and Mitigation Measures4.2-1		3.4 2.5	Environmental Setting	
3.6       Proposed Project		3.5	Land Use and Zoning	
3.7       Project Characteristics       3-1/         3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       4.1-1         4.1.1       Introduction       4.1-1         4.1.2       Environmental Setting       4.1-2         4.1.3       Regulatory Setting       4.1-6         4.1.4       Impacts and Mitigation Measures       4.1-8         Section 4.2       Agriculture and Forestry Resources       4.2-1         4.2.1       Introduction       4.2-1         4.2.2       Environmental Setting       4.2-1         4.2.3       Regulatory Setting       4.2-3         4.2.4       Impacts and Mitigation Measures       4.2-3         4.2.3       Regulatory Setting       4.2-1		3.6	Proposed Project	
3.8       Entitlements Required       3-26         3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       4.1-1         4.1.1       Introduction       4.1-1         4.1.2       Environmental Setting       4.1-2         4.1.3       Regulatory Setting       4.1-6         4.1.4       Impacts and Mitigation Measures       4.1-8         Section 4.2       Agriculture and Forestry Resources       4.2-1         4.2.1       Introduction       4.2-1         4.2.2       Environmental Setting       4.2-1         4.2.3       Regulatory Setting       4.2-3         4.2.4       Impacts and Mitigation Measures       4.2-1         4.2.3       Regulatory Setting       4.2-3         4.2.4       Impacts and Mitigation Measures       4.2-1		3.7	Project Characteristics	
3.9       Cumulative Projects       3-27         Section 4.1       Aesthetics       4.1-1         4.1.1       Introduction       4.1-1         4.1.2       Environmental Setting       4.1-2         4.1.3       Regulatory Setting       4.1-6         4.1.4       Impacts and Mitigation Measures       4.1-8         Section 4.2       Agriculture and Forestry Resources       4.2-1         4.2.1       Introduction       4.2-1         4.2.2       Environmental Setting       4.2-1         4.2.3       Regulatory Setting       4.2-3         4.2.4       Impacts and Mitigation Measures       4.2-1		3.8	Entitlements Required	
Section 4.1Aesthetics		3.9	Cumulative Projects	
4.1.1Introduction4.1-14.1.2Environmental Setting4.1-24.1.3Regulatory Setting4.1-64.1.4Impacts and Mitigation Measures4.1-8Section 4.2Agriculture and Forestry Resources4.2-14.2.1Introduction4.2-14.2.2Environmental Setting4.2-14.2.3Regulatory Setting4.2-34.2.4Impacts and Mitigation Measures4.2-1	Section 4.1	Aesthe	tics	4.1-1
4.1.2Environmental Setting4.1-24.1.3Regulatory Setting4.1-64.1.4Impacts and Mitigation Measures4.1-8Section 4.2Agriculture and Forestry Resources4.2-14.2.1Introduction4.2-14.2.2Environmental Setting4.2-14.2.3Regulatory Setting4.2-34.2.4Impacts and Mitigation Measures4.2-1		111	Introduction	4 1-1
4.1.3       Regulatory Setting		4.1.1		······································
4.1.4       Impacts and Mitigation Measures       4.1-8         Section 4.2       Agriculture and Forestry Resources       4.2-1         4.2.1       Introduction       4.2-1         4.2.2       Environmental Setting       4.2-1         4.2.3       Regulatory Setting       4.2-3         4.2.4       Impacts and Mitigation Measures       4.2-1		4.1.1 4.1.2	Environmental Setting	
Section 4.2Agriculture and Forestry Resources4.2-14.2.1Introduction4.2-14.2.2Environmental Setting4.2-14.2.3Regulatory Setting4.2-34.2.4Impacts and Mitigation Measures4.2-11		4.1.1 4.1.2 4.1.3	Environmental Setting Regulatory Setting	
4.2.1Introduction4.2-14.2.2Environmental Setting4.2-14.2.3Regulatory Setting4.2-34.2.4Impacts and Mitigation Measures4.2-11		4.1.1 4.1.2 4.1.3 4.1.4	Environmental Setting Regulatory Setting Impacts and Mitigation Measures	4.1-2 4.1-6 4.1-8
<ul> <li>4.2.2 Environmental Setting</li></ul>	Section 4.2	4.1.1 4.1.2 4.1.3 4.1.4 Agricu	Environmental Setting Regulatory Setting Impacts and Mitigation Measures Iture and Forestry Resources	4.1-2 4.1-6 4.1-8 4.2-1
4.2.3 Regulatory Setting	Section 4.2	4.1.1 4.1.2 4.1.3 4.1.4 Agricu 4.2.1	Environmental Setting Regulatory Setting Impacts and Mitigation Measures Iture and Forestry Resources Introduction	4.1-2 4.1-6 4.1-8 4.1-8 4.2-1
4.2.4 Impacts and Mitigation Measures 4.2-11	Section 4.2	4.1.1 4.1.2 4.1.3 4.1.4 <b>Agricu</b> 4.2.1 4.2.2	Environmental Setting Regulatory Setting Impacts and Mitigation Measures Iture and Forestry Resources Introduction Environmental Setting	4.1-2 4.1-2 4.1-6 4.1-8 <b>4.2-1</b> 4.2-1 4.2-1
	Section 4.2	4.1.1 4.1.2 4.1.3 4.1.4 <b>Agricu</b> 4.2.1 4.2.2 4.2.3	Environmental Setting Regulatory Setting Impacts and Mitigation Measures Iture and Forestry Resources Introduction Environmental Setting Regulatory Setting	4.1-2 4.1-6 4.1-8 4.1-8 4.2-1 4.2-1 4.2-1 4.2-3

Section 4.3	Air Qual	lity	4.3-1
	4.3.1	Introduction	
	4.3.2	Environmental Setting	
	4.3.3	Regulatory Setting	
	4.3.4	Impacts and Mitigation Measures	4.3-26
Section 4.4	Biologi	ical Resources	4.4-1
	4.4.1	Introduction	
	4.4.2	Environmental Setting	
	4.4.3	Regulatory Setting	
	4.4.4	Impacts and Mitigation Measures	4.4-26
Section 4.5	Cultura	al Resources	4.5-1
	4.5.1	Introduction	
	4.5.2	Environmental Setting	
	4.5.3	Regulatory Setting	
	4.5.4	Impacts and Mitigation Measures	
Section 4.6	Energy	·	4.6-1
	4.6.1	Introduction	
	4.6.2	Environmental Setting	
	4.6.3	Regulatory Setting	
	4.6.4	Impacts and Mitigation Measures	4.6-9
Section 4.7	Geolog	gy and Soils	4.7-1
	4.7.1	Introduction	
	4.7.2	Environmental Setting	
	4.7.3	Regulatory Setting	
	4.7.4	Impacts and Mitigation Measures	
Section 4.8	Greenh	house Gas Emissions	4.8-1
	4.8.1	Introduction	
	4.8.2	Environmental Setting	
	4.8.3	Regulatory Setting	
	4.8.4	Impacts and Mitigation Measures	
Section 4.9	Hazard	ls and Hazardous Materials	4.9-1
	4.9.1	Introduction	
	4.9.2	Environmental Setting	
	4.9.3	Regulatory Setting	
	4.9.4	Impacts and Mitigation Measures	
Section 4.10	Hydrol	ogy and Water Quality	
	4.10.1	Introduction	
	4.10.2	Environmental Setting	
	4.10.3	Regulatory Setting	
	4.10.4	Impacts and Mitigation Measures	
Section 4.11	Land U	lse and Planning	
	4.11.1	Introduction	
	4.11.2	Environmental Setting	
	4.11.3	Regulatory Setting	
	4.11.4	Impacts and Mitigation Measures	4.11-21

Section 4.12	Minera	al Resources	4.12-1
	4.12.1	Introduction	4.12-1
	4.12.2	Environmental Setting	4.12-1
	4.12.3	Regulatory Setting	4.12-7
	4.12.4	Impacts and Mitigation Measures	4.12-8
Section 4.13	Noise		4.13-1
	4.13.1	Introduction	4.13-1
	4.13.2	Environmental Setting	4.13-6
	4.13.3	Regulatory Setting	4.13-10
	4.13.4	Impacts and Mitigation Measures	4.13-17
Section 4.14	Public	Services	4.14-1
	4.14.1	Introduction	4.14-1
	4.14.2	Environmental Setting	4.14-1
	4.14.3	Regulatory Setting	4.14-4
	4.14.4	Impacts and Mitigation Measures	4.14-10
Section 4.15	Transp	ortation	4.15-1
	4.15.1	Introduction	4.15-1
	4.15.2	Environmental Setting	4.15-1
	4.15.3	Regulatory Setting	4.15-4
	4.15.4	Impacts and Mitigation Measures	4.15-10
Section 4.16	Tribal C	Cultural Resources	4.16-1
	4.16.1	Introduction	4.16-1
	4.16.2	Environmental Setting	4.16-1
	4.16.3	Regulatory Setting	4.16-3
	4.16.4	Impacts and Mitigation Measures	4.16-5
Section 4.17	' Utilitie	s and Service Systems	
	4.17.1	Introduction	4.17-1
	4.17.2	Environmental Setting	4.17-1
	4.17.3	Regulatory Setting	4.17-4
	4.17.4	Impacts and Mitigation Measures	4.17-11
Section 4.18	8 Wildfir	е	4.18-1
	4.18.1	Introduction	4.18-1
	4.18.2	Environmental Setting	4.18-1
	4.18.3	Regulatory Setting	4.18-4
	4.18.4	Impacts and Mitigation Measures	4.18-7
Chapter 5	Consec	quences of Project Implementation	5-1
	5.1	Environmental Effects Found to Be Less than Significant	5-1
	5.2	Significant Environmental Effects that Cannot Be Avoided	5-2
	5.3	Irreversible Impacts	5-4
	5.4	Growth Inducement	5-5
Chapter 6	Alterna	atives	6-1
	6.1	Introduction	6-1
	6.2	Project Objectives	6-4
	6.3	Overview of the Project	6-5
	6.4	Overview of Alternatives to the Project	6-5

	6.5	Alternatives Considered and Rejected	6-9
	6.6	Analysis Format	6-11
	6.7	Impact Analysis	6-15
	6.8	Environmentally Superior Alternative	6-55
Chapter 7	Respor	nse to Comments	7-1
Chapter 8	Organi	zations and Persons Consulted	8-1
	8.1	Federal	8-1
	8.2	State of California	8-1
	8.3	Regional and Local	8-1
	8.4	Other	8-2
Chapter 9	List of	Preparers	9-1
	9.1	Lead Agency	9-1
	9.2	Technical Assistance	9-1
Chapter 10	Bibliog	graphy	10-1
	10.1	Project Description	
	10.2	Aesthetics	
	10.3	Agriculture and Forestry Resources	
	10.4	Air Quality	
	10.5	Biological Resources	
	10.6	Cultural Resources	
	10.7	Energy	
	10.8	Geology and Soils	
	10.9	Greenhouse Gas Emissions	
	10.10	Hazards and Hazardous Materials	10-11
	10.11	Hydrology and Water Quality	
	10.12	Land Use and Planning	10-13
	10.13	Mineral Resources	
	10.14	Noise	10-14
	10.15	Public Services	10-14
	10.16	Transportation	10-16
	10.17	Tribal Cultural Resources	
	10.18	Utilities and Service Systems	
	10.19	Wildfire	10-17

#### Appendices

#### Volume 2

- Appendix A: NOP/Initial Study
- Appendix B: Air Quality and Greenhouse Technical Documentation
  - B.1: Air Quality and Greenhouse Gas Study
  - B.2: SJVAPCD and SCAQMD Amicus Curiae Brief
  - B.3: 2017 ISR Annual Report
  - B.4 ISR Staff Report
  - B.5: 2017 Moyer Guidelines
  - B.6: SJVAPCD 2019 Annual Report on Toxic Emissions

#### Volume 3

- Appendix C: Botanical Resources Technical Documentation
  - C.1: Botanical Resources Survey Report
  - C.2: Aquatic Resources and Watercourses Delineation Report
- Appendix D: Wildlife Resources Assessment
- Appendix E: Cultural Resources Inventory
- Appendix F: Energy Study
- Appendix G: Soils Analysis Study
- Appendix H: Geotechnical Engineering Report
- Appendix I: Paleontological Resources Assessment
- Appendix J: Phase I Environmental Site Assessment and Limited Soil Sampling
- Appendix K: Floodplain Study and Scour Analysis
- Appendix L: Noise Study
- Appendix M: Traffic Study
- Appendix N: Water Supply Assessment

### List of Figures

Figure 3-1:	Regional Vicinity	3-2
Figure 3-2:	Project Vicinity	3-3
Figure 3-3:	Site Plan	3-5
Figure 3-4:	Williamson Act Land Use Contract Cancellation	3-9
Figure 3-5:	Flood Zone	3-10
Figure 3-6:	Onsite Plugged Wells	3-11
Figure 3-7:	Existing General Plan & Land Use Designations	3-13
Figure 3-8:	Proposed Amendments to Circulation Element	3-14
Figure 3-9:	Existing Zoning	3-15
Figure 3-10:	Cumulative Projects Map	3-29
Figure 4.1-1:	Key Observation Point (KOP) Locations	4.1-11
Figure 4.1-2:	KOP 1 – Existing and Simulated Views from East of I-5 along Edmonston	
	Pumping Plant Road Looking Northeast towards the Project Site	4.1-19
Figure 4.1-3:	KOP 2 – Existing and Simulated Views from Northbound Travel Lanes of I-5	
	Looking East towards the Project Site	4.1-22
Figure 4.1-4:	KOP 3 – Existing and Simulated Views from the Community of Wheeler Ridge	
	Looking Southeast towards the Project Site	4.1-25
Figure 4.1-5:	KOP 4 – Existing and Simulated Views from the Intersection of Laval Road and	
	Rancho Road Looking South toward the Project Site	4.1-29
Figure 4.2-1:	Farmland Mapping and Monitoring Program Designations	4.2-4
Figure 4.4-1:	Vegetation Communities	4.4-5
Figure 4.4-2:	Critical Habitat	4.4-14
Figure 4.4-3:	Wildlife Observations Map	4.4-15
Figure 4.4-4:	National Wetland Inventory	4.4-19
Figure 4.7-1:	Faults in the Vicinity of the Project Site	4.7-4
Figure 4.12-1:	Petroleum Mining in the Project Vicinity	4.12-3
Figure 4.12-2:	Mines within the Project Vicinity	4.12-6
Figure 4.13-1:	Effects of Noise on People	4.13-5
Figure 4.13-2:	Noise Monitoring Locations	4.13-9
Figure 4.13-3:	Land Use Compatibility for Community Noise Environment	4.13-12
Figure 4.13-4:	Noise Contour Map	4.13-28
Figure 4.18-1:	Fire Hazard Severity Zones for Local Responsibility Areas	4.18-2
Figure 4.18-2:	Fire Hazard Severity Zones for State Responsibility Areas	4.18-3

### List of Tables

Table 1-1:	Project Assessor Parcel Numbers (APNs) – Pastoria Solar Project	1-1
Table 1-2:	Project Statistics	1-2
Table 1-3:	Project Site and Surrounding Land Uses	1-6
Table 1-4:	Summary of Project Impacts That Are Less than Significant or Less than	
	Significant with Mitigation	1-11
Table 1-5:	Summary of Significant and Unavoidable Project-Level and Cumulative Impacts	
	of the Solar Facility	1-13
Table 1-6:	Summary of Development Alternatives	1-19
Table 1-7:	Comparison of Alternatives	1-21
Table 1-8:	Summary of Impacts, Mitigation Measures, and Levels of Significance	1-27
Table 2-1:	Summary of IS/NOP Comments	2-5
Table 2-2:	Required EIR Contents	2-9
Table 3-1:	Project Site and Surrounding Land Uses	3-4
Table 3-2:	Project Assessor Parcel Numbers (APNs) and Acreage	3-4
Table 3-3:	Cumulative Projects List	3-30
Table 4.1-1:	Key Observation Points	4.1-10
Table 4.1-2:	Visual Simulation Methodology and Assumptions	4.1-12
Table 4.1-3:	Visual Quality Rating System	4.1-14
Table 4.1-4:	Visual Quality Rating Analysis – KOP 1	4.1-20
Table 4.1-5:	Visual Quality Rating Analysis – KOP 2	4.1-23
Table 4.1-6:	Visual Quality Rating Analysis – KOP 3	4.1-26
Table 4.1-7:	Visual Quality Rating Analysis – KOP 4	4.1-30
Table 4.2-1:	Agricultural Land Use Designation Conversions in 2018	4.2-1
Table 4.3-1:	State and National Criteria Pollutant Standards and SJVAPCD Attainment Status	4.3-4
Table 4.3-2:	Air Quality Data Summary (2016–2018)	4.3-6
Table 4.3-3:	Range of Valley Fever Cases	4.3-18
Table 4.3-4:	Estimated Health Risk during Construction	4.3-43
Table 4.3-5:	Estimated Health Risk During Operation	4.3-44
Table 4.3-6:	24-Hour PM <sub>10</sub> and PM <sub>2.5</sub> Impacts	4.3-46
Table 4.3-7:	Unmitigated Construction Emissions	4.3-51
Table 4.3-8:	Mitigated Construction Emissions	4.3-51
Table 4.3-9:	Unmitigated Annual Operational Emissions	4.3-52
Table 4.3-10:	2020 Emissions Projections for the Project, Kern County, and San Joaquin Valley	,
	Air Basin	4.3-54
Table 4.4-1:	Vegetation Community on the Project Site	4.4-4
Table 4.4-2:	Special-Status Plant Species with the Potential to Occur on the Project Site	4.4-7
Table 4.4-3:	Special-Status Wildlife Species with the Potential to Occur on the Project Site	4.4-10
Table 4.5-1:	Previously Recorded Cultural Resources	4.5-13
Table 4.6-1:	Electric Power Mix delivered to Retail Customers in 2018	4.6-3
Table 4.6-2:	Project Construction Transportation Fuel Usage	4.6-12
Table 4.6-3:	Project Operational Energy Usage	4.6-14
Table 4.7-1:	Historic Earthquakes in Project Area Vicinity	4.7-3
Table 4.8-1:	California Greenhouse Gas Emissions (MMTCO <sub>2</sub> e)	4.8-3
Table 4.8-2:	Kern County Greenhouse Gas Emissions (MTCO <sub>2</sub> e)	4.8-4
Table 4.8-3:	Estimated Project Greenhouse Gas Emissions	4.8-17
Table 4.8-4:	California Greenhouse Gas Emission Reduction Strategies	4.8-19

Table 4.8-5:	Applicable Scoping Plan Strategies for Project	4.8-21
Table 4.8-6:	Project Consistency with an Applicable Plan, Policy, or Regulation for GHG	
	Emissions	4.8-23
Table 4.11-1:	Project Site and Surrounding Land Uses and Zoning Classifications	4.11-3
Table 4.11-2:	Consistency Analysis with Kern County General Plan for Land Use	4.11-27
Table 4.12-1:	Classified Mineral Resources within Kern County	4.12-2
Table 4.12-2:	Mines within the Project Vicinity	4.12-5
Table 4.13-1:	Common Noise Metrics	4.13-4
Table 4.13-2:	Summary of Noise Survey Locations	4.13-7
Table 4.13-3:	Ambient Sound Levels in the Project Vicinity	4.13-8
Table 4.13-4:	Vibration Criteria for Structural Damage	4.13-16
Table 4.13-5:	Vibration Criteria for Human Annoyance	4.13-16
Table 4.13-6:	Noise Levels (L <sub>max</sub> )	4.13-18
Table 4.13-7:	Vibration Source Amplitudes for Construction Equipment	4.13-21
Table 4.13-8:	Existing and Project Construction Volumes	4.13-24
Table 4.13-9:	Construction Equipment and Composite Site Noise Levels	4.13-25
Table 4.13-10:	Average Construction Noise Levels at Various Distances	4.13-25
Table 4.14-1:	List of Nearby Fire Stations	4.14-2
Table 4.14-2:	List of Nearby Police Substations	4.14-3
Table 4.15-1:	Existing Conditions Roadway Segment Level of Service	4.15-4
Table 4.15-2:	Project Trip Generation – Construction	4.15-11
Table 4.15-3:	Existing and Project Construction Level of Service	4.15-13
Table 4.16-1:	Summary of AB 52 Consultation Efforts	4.16-2
Table 4.17-1:	Summary of Kern County Public Works Landfills	4.17-4
Table 4.17-2:	Estimated Dry-Period Deliveries of SWP Long-Term Contract Water	4.17-16
Table 4.18-1:	Vegetation Community or Land Cover Type in the Study Area	4.18-4
Table 5-1:	Summary of Significant and Unavoidable Impacts of the Project	5-2
Table 6-1:	Summary of Development Alternatives	6-7
Table 6-2:	Comparison of Alternatives	6-13

# 1.1 Introduction

The Pastoria Solar Project (project), proposed by Pastoria Solar Energy Company LLC (project proponent/operator), would develop a photovoltaic (PV) solar facility and associated infrastructure necessary to generate a combined 115 megawatts (MW) of renewable electrical energy with the ability to store up to 80 MW in a battery energy storage system (BESS). The project consists of four contiguous parcels, two western parcels and two eastern parcels, which together would comprise the approximately 650-acre project site. Both the eastern and western parcels would contain solar facilities, while the eastern parcels would also contain the energy storage facilities and a substation. The western site is approximately 325 acres and the eastern site is approximately 325 acres. A 220 kilovolt (kV) gen-tie line would extend from the onsite substation due east for 0.5 miles to connect with the substation at the Pastoria Energy Facility (PEF). From this point, power would be transmitted to the Southern California Edison (SCE) grid at the Pastoria Substation through an existing line. The project's gen-tie line would cross under the existing transmission corridor that is between the project site and the PEF.

The project proponent/operator is requesting a Conditional Use Permit (CUP) from Kern County to authorize the construction and operation of the 115 MW renewable electrical energy and energy storage facilities (CUP 9, Map 219), and a General Plan Amendment (GPA) (Circulation) (GPA 10, Map 219). The project proponent/operator is also requesting a Williamson Act Land Use Contract Cancellation. The project proponent/operator is also requesting California Environmental Quality Act (CEQA) review for the project.

TABLE 1-1:	PROJECT ASSESSOR PARCEL NUMBERS (APNS) – PASTORIA SOLAR PROJECT			
Site	APN	Acres (approx.)	Zoning	Kern County General Plan
Western	241-310-10	162.5	А	8.1/2.5
	241-310-15	162.5	А	8.3/2.5
Eastern	241-310-08	162.5	А	8.3/2.5
	241-310-17	162.5	А	8.1/2.5
_	Total	650	_	

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

This Draft Environmental Impact Report (EIR) has been prepared by Kern County as the Lead Agency under CEQA. The Draft EIR provides information about the environmental setting and impacts of the project and alternatives. It informs the public about the project and its impacts and provides information to meet the needs of local, State, and federal permitting agencies that are required to consider the project. The EIR will be used by Kern County to determine whether to approve the requested CUP (CUP 9, Map 219),

the requested GPA (GPA 100, Map 219) required for the project, and the requested Williamson Act Land Use Contract Cancellation.

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, *Regional Vicinity*, and Figure 3-2, *Project Vicinity*, of this EIR, the project is located in the southeastern portion of Kern County. The project would generate a total of 115 MW of renewable electrical energy with the ability to store up to 80 MW in a BESS, for delivery to the Statewide grid. The project would construct a gen-tie line that would ultimately interconnect to the existing SCE Pastoria Substation.

Table 1-2, *Project Statistics*, provides an overview of the capacity, acreage, location, land uses and approvals for both project phases.

Site	Gross Acres	Section, Township/Range	Specific Plan Land Use	County Discretionary Approvals	
Western	325	Sections 11, 12, 13, 14 Township 10 N Range 19W	<ul> <li>8.1 / 2.5 (Intensive Agriculture [Min</li> <li>20 Acres] Flood Hazard)</li> <li>8.3/2.5(Extensive Agriculture [Min</li> <li>20 Acres]/Flood Hazard)</li> <li>8.4/2.5 (Mineral and Petroleum/ Flood</li> </ul>	CUP, GPA, Williamson Land Use Contract Cancellation	
Eastern	325	Sections 11, 12, 13, 14 Township 10 N Range 19W	Hazard) 8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard) 8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard)	CUP, GPA, Williamson Land Use Contract Cancellation	

TABLE 1-2:**PROJECT STATISTICS** 

## **1.2.1** Discretionary Entitlements Required

The anticipated approvals needed for the project include adoption of a conditional use permit, cancellation of an existing Williamson Act Land Use Contract, and general plan amendment to the Circulation Element of the Kern County General Plan. Construction and operation of the proposed solar energy facility may require additional local, State, and Federal entitlements; as well as discretionary and ministerial actions and approvals listed, but not limited to, below:

## 1.2.2 County of Kern

- Certification of Final Environmental Impact Report
- Adoption of 15091, Findings of Fact, and 15093, Statement of Overriding Considerations

- Approval of Mitigation Monitoring and Reporting Program
- Approval of Kern County Conditional Use Permit (CUP 9, Map 219)
- Approval of Williamson Act Land Use Contract Cancellation
- Approval of General Plan Amendment (Circulation) (GPA 10, Map 219)
- Approval of Grading Permits
- Approval of Building Permits
- Fire Safety Plan

## **1.2.3** Other Responsible Agency Entitlements

### **Federal**

- U.S. Fish and Wildlife Service (USFWS)
  - Section 10 Permit (Incidental Take and Habitat Conservation Plan Agreement) (if required)

#### State

- California Department of Fish and Wildlife (CDFW)
  - Section 1600 et seq. permits (Streambed Alteration Agreements) (if required)
  - Section 2081 Permit (State-listed endangered species) (if required)
- Central Valley Regional Water Quality Control Board
  - Water Quality Certification (401 Permit) (if required)
  - Waste Discharge Requirements (if required)
  - National Pollution Discharge Elimination System (NPDES) Construction General Permit
- California Department of Transportation (Caltrans)
  - Oversized Loads Permit

### Local

- San Joaquin Valley Air Pollution Control District (SJVAPCD)
  - 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 project is being developed independently of other approved or proposed solar projects in the County. If approved, the Pastoria Solar Project would be subject to their own use permits, conditions of approval, interconnection agreements, and power purchase agreement (PPA). The County understands that the Pastoria Solar Project facilities would be built and operated independently of any other solar project, and, if approved, would not depend on any other solar project for economic viability. The project would involve constructing either a 220 kV gen-tie, which would ultimately connect to the SCE Pastoria Substation.

# **1.4** Purpose and Use of the EIR

An EIR is a public informational document used in the planning and decision-making process. This projectlevel 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 1 mile south of the project site. Elevations in the project area range from approximately 900 feet above mean sea level (amsl) on the valley floor just north of the project site to 4,815 feet at Grapevine Peak, which is 3.65 miles southwest of the project site. Elevations across the project site range from approximately 1,169 feet at the southwest corner to 1,027 feet at the northeast corner, for a change of 142 feet over 1.41 miles (approximately 2 percent slope).

## 1.5.2 Surrounding Land Uses and Project Site Conditions

Land uses in the region consist largely of agriculture with a mix of row crops and grazing land. The project site is entirely within the Tejon Ranch boundaries and is subject to the Tejon Ranch Conservation and Land Use Agreement (Ranchwide Agreement) which is discussed in more detail below. The general area to the north of the project site is primarily used for almond and pistachio farming. An oil pumping facility is located 0.17 miles from the northern border. The project site is located directly adjacent to and south of the Tejon Oil Field, which includes many active, idle, and plugged oil and gas wells. The area to the south and west of the project site is predominantly grazing land while the area to the east has a few vineyards. Existing infrastructure within the area includes the PEF, a natural gas-fired, combined-cycle power plant, located approximately 0.5 miles east of the project site. The California Aqueduct, which runs east–west in the vicinity of the project and extends to Department of Water Resources' Edmonston Pumping Plant, is approximately 0.7 miles south of the project site. There is also a gravel quarry operation approximately 0.8 miles to the southeast of the site, between the PEF and Edmonston Pumping Plant. The Tejon Commerce Center is located approximately 3.5 miles northwest of the project site.

The nearest populated areas to the project site are the unincorporated communities of Grapevine, Wheeler Ridge, Mettler, and Lebec, which are located approximately 3 miles west, 5 miles northwest, 9 miles northwest, and 5 miles southwest of the project site, respectively. The City of Bakersfield, located approximately 25 miles to the north, is the nearest metropolitan area in relation to the project site. Other communities within the vicinity are the City of Arvin, the unincorporated community of Weedpatch, the unincorporated community of Lamont, the unincorporated communities of Frazier Park, Pinion Pines, and Pine Mountain Club (collectively referred to as the Mountain Communities) which are located approximately 15 miles north, 18 miles north, 19 miles north, and 9.5 miles southwest of the project site, respectively. The immediate project area has few nearby residences. The nearest residence is about 2.5 miles to the northwest and there is a small cluster of homes about 2.7 miles northwest.

Table 1-3, *Project Site and Surrounding Land Uses*, presents the existing land uses, General Plan designations, and Zoning classification for the project site and surrounding area.

	Existing Land Use	Existing Map Code Designation	Existing Zone Classification
Project Site	Undeveloped Open Space; Grazing Land	8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard);	A (Exclusive Agriculture)
		8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard);	
		8.4/2.5 (Mineral and Petroleum/Flood Hazard)	
North of Project Site	Undeveloped Open Space; Grazing Land; Orchard; Vineyards; Oil Pumping Facility	<ul><li>8.1/2.5 (Intensive Agriculture [Min</li><li>20 Acres]/Flood Hazard);</li><li>8.4/2.5 (Mineral and Petroleum/Flood Hazard)</li></ul>	A (Exclusive Agriculture)
South of Project Site	Grazing Land; California Aqueduct; Edmonston Pumping Plant Road	8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard)	A (Exclusive Agriculture)
East of Project Site	Undeveloped Open Space; Grazing Land; a Natural Gas Powered Co-generation Facility; Griffith Aggregate Mine; Edmonston Pumping Plant; Vineyards	8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard)	A (Exclusive Agriculture)
West of Project Site	Undeveloped Open Space; Grazing Land; Vineyards	8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard)	A (Exclusive Agriculture)

#### TABLE 1-3: PROJECT SITE AND SURROUNDING LAND USES

## 1.5.3 **Project Objectives**

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

The following is a list of project objectives identified by the project applicant:

- Construct and operate a large-scale solar energy generation facility with a battery energy storage system component to help California advance its RPS and energy storage goals;
- Minimize infrastructure needs and reduce potential environmental impacts by locating the facility near existing and planned infrastructure, including access to an existing substation with available transmission capacity;
- Site and design the project in a manner that minimizes potential conflicts with residential, conservation, and agricultural land uses;
- Use proven and established PV and energy storage technologies that are efficient and require low maintenance;
- Assist Kern County in promoting its role as the State's leading producer of renewable energy;

- Provide green jobs in Kern County and the State of California;
- Site and design the project in an environmentally responsible manner to avoid and/or minimize potential impacts, consistent with existing Kern County land use plans; and
- Support California's efforts to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006, which requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under Senate Bill 32, which requires that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit by 2030;
- Support California's aggressive RPS Program consistent with the timeline established by Senate Bill 100 (De León, also known as the "California Renewables Portfolio Standard Program: emissions of greenhouse gases") as approved by the California Legislature and signed by Governor Brown in September 2018, which established a 50 percent RPS goal by December 31, 2026, 60 percent by December 31, 2030, and a goal that 100 percent of electric retail sales to end-use customers be provided by renewable energy and zero-carbon resources by 2045.

## **1.5.4 Project Characteristics**

The project includes the development of a 115 MW PV solar energy-generating facility with the ability to store up to 80 MW in a BESS, and associated infrastructure. 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 3-3, *Site Plan*, of this EIR. The project would include the following components:

- Installation of up to 115 MW of solar PV modules, mounted on a single-axis racking system. The mounting systems for the modules would be mounted on steel support posts that would be pile driven into the ground;
- Installation of BESS and accessories that would provide 80 MW (320 MWh) of energy storage capacity for the electrical grid;
- Installation of a 220 kV gen-tie line would extend from the onsite substation due east for 0.5 miles to connect with SCE's Pastoria Substation;
- A collector substation including circuit breakers, disconnect switches, metering protection equipment, and main step-up transformer(s);
- Underground or aboveground collection systems throughout the solar facilities (the collection systems would be aggregated at multiple circuit breakers or medium-voltage switchgear positions within the project facilities, leading to the collector substation);
- 34.5 kV to 220 kV step-up conversion station;
- Onsite access corridors; and
- Perimeter security fencing and nighttime directional lighting at the onsite substation.

Components for the proposed photovoltaic solar energy facility include (a) power generation and collection systems, (b) electric power transmission systems, (c) battery storage systems, and (d) site access and security. Those systems are described in more detail below.

### **Solar Photovoltaic Panels**

The project consists of approximately 350,000 PV panels arranged in a grid pattern over the project site. The project would include installation of PV panels that would be mounted on steel support posts that would be pile driven into the ground and connected to inverters. The PV panels would be made of a thin film material or polycrystalline silicon material covering the glass panes, which would be dark in color, highly absorptive, and have minimum reflectivity. The PV panels would be manufactured at an off-site location and transported to the project site for installation.

### **Solar Arrays**

The project would use solar panels mounted on single-axis tracking pivots that would be aligned north–south in rows evenly spaced apart, providing adequate construction and maintenance access. The tracking pivots rotate the panels from east to west during the day to increase the capture of solar energy and have a pivoting range of up to 120 degrees. Where needed, the post length and associated pivot location would be designed with sufficient clearance to accommodate the relevant design storm and associated freeboard requirements. The panels would measure between 4 feet to 7 feet in height and stow horizontally during nighttime and as operational conditions dictate. The tracking pivots would be supported by posts that would be driven directly into the ground, without a need for concrete foundations. The north–south rows of the trackers would be grouped into rectangular arrays that extend across the project site in an east–west direction. In some cases, these arrays would be separated by 20-foot-wide maintenance corridors. The maximum height of the single axis tracker would be 7 feet above grade at the beginning and end of each day.

### **Electrical Collector System and Inverters**

The direct current (DC) power generated by the solar arrays would be transmitted using electric lines held in cable trenches or above ground cable trays to the inverters where the power would be converted to alternating current (AC) power for delivery to the grid. The inverters would be enclosed in metal cases and mounted on concrete slabs and would be dispersed among the arrays. The AC power from the inverters would then be transmitted to the onsite switch gear by underground electric lines.

Overhead communications lines would not be needed as the equipment used to control the trackers utilizes wireless technology.

## **Onsite Substation**

The substation required to step up the power generated by the project to transmission voltage would be located immediately inside the eastern property line. The substation would occupy an area that would be approximately 200 feet by 200 feet in size. Transformers would be in a concrete lined basin that is designed to contain any fluid spills. The substation would be surrounded by a 6-foot-high chain link fence topped with barbed wire, and gravel would cover the ground surface. Lighting would be installed in the substation for security and for use at times when nighttime emergency repair work is required.

### **Generation Tie-Line and Interconnection to the Grid**

A 220 kV gen-tie line would extend from the onsite substation due east for 0.5 miles to connect with the substation at the PEF. The gen-tie line would consist of utility poles, cabling, trenches, and a corresponding

dirt maintenance road. From this point, power would be transmitted to the SCE grid at the Pastoria Substation through an existing line. The project's gen-tie line would cross under the existing transmission corridor that is between the project site and the PEF.

## Battery Energy Storage System

The project would install an 80 MW BESS and associated infrastructure that would provide energy storage capacity for the electric grid. The BESS is proposed to be located adjacent to the onsite collector substation and would include rechargeable battery packs, a Battery Management System (BMS), a Thermal Management System (TMS), grid-tied bi-directional inverters, step-up transformers, and required Supervisory Control and Data Acquisition (SCADA) devices, which would all work together as a single system. The lithium ion energy storage batteries would be housed in a structure or within conex boxes. The BESS would be modular, fully integrated, and AC-coupled. In the event a single battery energy storage structure is constructed near the onsite substation, a height of approximately 30 feet (including any screening for heating, ventilation, and air conditioning (HVAC)) is anticipated as the maximum height. The batteries under this configuration are housed in open-air-style racking (similar to computer racking) approximately 8.5 feet high. The associated inverters, transformers, and switchgear would be located immediately adjacent to the structure on concrete pads. The final configuration could be different, for instance, the battery storage facility could be housed in multiple structure or containers, or a single container or structure; however, all BESS components would be constructed within the footprint identified in Chapter 3, *Project Description*, Figure 3-3.

The energy storage structure would also have a fire rating in conformance with County standards and specialized fire suppression systems installed for the battery rooms. All non-battery rooms would have County-approved standard sprinkler systems. The structure would also have HVAC cooling in the battery room to maintain energy efficiency. Power to the HVAC, lighting, etc. would be provided via a connection to the onsite substation service transformer with connection lines installed aboveground and/or belowground. The BESS would be unmanned, with remote operational control and periodic inspections and maintenance performed as necessary. Power stored by the BESS would be delivered via 220 kV circuits to a grid interconnection point at SCE's Pastoria Substation.

## Fencing

All fence installation requirements would be evaluated, and the best-fit scenario would be incorporated in the project site based on the County's final determination. Proposed fences would be installed around the perimeter of the two project halves (eastern parcels and western parcels), substation, and other areas requiring controlled access for safety and security purposes. The fencing is anticipated to be six-foot-tall chain link style fencing topped by 1 foot of three-strand barbed wire for a total height of 7 feet. A 5-inch clearance would be provided, as measured from the ground to the bottom of the fence, for wildlife passage. The fencing would remain for the life of the project.

### Site Access

Access to the site would be along an existing access way extending north from Edmonston Pumping Plant Road and reaching the southern boundary of the project site. By agreement with the property owners, the existing access road running north–south through the center of the project site would remain. The project would be constructed in two halves (eastern parcels and western parcels), one on either side of the existing access road. Two separate gated entrances on each side would provide access to the east and west halves of the facility from this road.

The project would include onsite 20-foot-wide access drives within maintenance corridors. The access drives would be compacted native surface to access the tracking solar PV panel arrays and other equipment for maintenance and to provide access for fire-fighting equipment. The locations of these corridors are identified on the site plan (Chapter 3, *Project Description*, Figure 3-3).

# **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 1-8**, *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
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfires

### **1.6.3** Less-than-Significant Impacts

**Table 1-4**, *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 1-4 would reduce impacts to a less-than-significant level.

# TABLE 1-4:SUMMARY OF PROJECT IMPACTS THAT ARE LESS THAN SIGNIFICANT OR LESS<br/>THAN SIGNIFICANT WITH MITIGATION

Impact	Mitigation Measures
Agriculture and Forestry Resources (Project)	MM 4.9-1 and MM 4.9-3
Air Quality (Project)	MM 4.3-1 through MM 4.3-9, and MM 4.3-11
Biological Resources (Project)	MM 4.4-1 through MM 4.4-13, MM 4.1-4, MM 4.1-5, MM 4.3-1, MM 4.3-2, MM 4.3-6, MM 4.7-3, and MM 4.9-3
Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-5
Energy (Project and Cumulative)	MM 4.3-5 and MM 4.3-7
Geology and Soils (Project and Cumulative)	MM 4.7-1 through MM 4.7-7
Greenhouse Gas Emissions (Project and Cumulative)	No mitigation required
Hazards and Hazardous Materials (Project and Cumulative)	MM 4.9-1, MM 4.9-2, MM4.9-3, MM 4.9-4, MM 4.141, MM 4.15-1, and MM 4.17-1
Hydrology and Water Quality (Project and Cumulative)	MM 4.7-3, MM 4.9-1, and MM 4.10-1
Land Use and Planning (Project and Cumulative)	MM 4.11-1
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 4.9-4, MM 4.14-1, and MM 4.14-2

TABLE 1-4:	SUMMARY OF PROJECT IMPACTS THAT ARE LESS THAN SIGNIFICANT OR LESS
	THAN SIGNIFICANT WITH MITIGATION

Impact	Mitigation Measures
Transportation (Project and Cumulative)	MM 4.15-1
Tribal Cultural Resources (Project and Cumulative)	MM 4.5-1 through MM 4.5-4
Utilities and Service Systems (Project and Cumulative)	MM 4.7-3, MM 4.10-1, and MM 4.17-1
Wildfire (Project)	MM 4.14-1 and MM 4.10-1

# **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
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Wildfire

**Table 1-5**, *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, 4.2, 4.3, 4.4, and 4.18 of this EIR present detailed analyses of these impacts and describe the means by which the mitigation measures listed in Table 1-5 would reduce the severity of impacts to the extent feasible.

TABLE 1-5:SUMMARY OF SIGNIFICANT AND UNAVOIDABLE PROJECT-LEVEL AND<br/>CUMULATIVE IMPACTS OF THE SOLAR FACILITY

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 4.1-3 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 <b>significant and unavoidable</b> .	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 650 acres of privately owned land to a solar energy production facility is considered a <b>significant and unavoidable</b> cumulative impact.
Agricultural and Forestry Resources	Implementation of the project would require cancellation of a Williamson Act Contract, which is in non-renewal status and set to expire February 28, 2023. No feasible mitigation is available to reduce impacts related to the cancellation of Williamson Act Contracts, therefore, impacts related to the cancellation of an open space contract would be <b>significant and unavoidable</b> .	The project would convert approximately 650 acres of agricultural land to non-agricultural uses. While development of the Grapevine Specific & Community Plan would result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), the proposed project's contribution to the conversion of agricultural land to non-agricultural uses would be cumulatively considerable. The project's incremental effect is cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the significant and unavoidable.
		The project would result in a significant impact involving the cancellation of an open space contract. Cumulative projects, including the Grapevine Specific & Community Plan, which are subject to Williamson Act Contracts in non- renewal status, would similarly result in conflicts related to cancellation of an open space contract or a Farmland Security Zone contract. As explained above under Impact 4.2-6, no feasible mitigation is available to reduce impacts related to the cancellation of Williamson Act Contracts. The project's incremental effect is cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus cumulative impacts would be <b>significant and unavoidable</b> .

TABLE 1-5:	SUMMARY OF SIGNIFICANT AND UNAVOIDABLE PROJECT-LEVEL AND
	CUMULATIVE IMPACTS OF THE SOLAR FACILITY

Resources	Project Impacts	Cumulative Impacts
Air Quality	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 <sub>2.5</sub> and contribute to the transmission of respiratory diseases like COVID-19. Even with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM <sub>2.5</sub> along with indirect linkages of criteria pollutants and COVID-19, on vulnerable populations would result in <b>significant and unavoidable</b> project level impacts.	The project would have cumulatively significant and unavoidable air quality impacts related to consistency with existing air quality plans due to the considerable net increase of criteria pollutants after implementation of mitigation. Although implementation of mitigation would not result in significant temporary levels of $NO_x$ during construction, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health impacts mentioned. As such, cumulative impacts for criteria pollutants would be considered <b>significant and unavoidable</b> .
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 Southern San Joaquin Valley, the project would result in a significant and unavoidable cumulative loss of foraging and nesting habitat for special-status species, even with the implementation of project-specific mitigation measures. Additionally, the installation of PV panels has the potential to cause cumulative impacts to migratory birds associated with collisions. The loss of foraging and nesting habitat for special-status species that may utilize habitat on the project site and impacts to migratory birds would result in a <b>significant</b> <b>and unavoidable</b> cumulative impact.
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 <b>significant and unavoidable</b> 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.

## 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 growthinducing 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, 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 (project and cumulative), 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.

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 115 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 115 MW) in Kern County. Fossil fuel-powered plants are designed on a large scale for continuous operation. However, byproducts of industrial power plant operation need to be considered in both design and operation. When waste heat that results from the finite efficiency of the power cycle is not recovered and used as steam or hot water, it must be released to the atmosphere, and often uses a cooling tower as a cooling medium (especially for condensing steam). The flue gas from combustion of the fossil fuels is discharged to the air and contains carbon dioxide and water vapor as well as other substances, such as nitrogen, nitrogen oxides, and sulfur oxides. Furthermore, unlike the project, fossil fuel-powered plants are major emitters of GHGs. In addition, industrial power plants generally involve the construction of large structures, such as cooling towers and gas stacks, as well as a large number of employees to operate the facility on a 24/7 basis 365 days a year. Accordingly, the development of an industrial power plant would typically result in greater adverse impacts related to: (1) aesthetics and the local visual setting of the project area; (2) air quality and GHG emissions; (3) land use and planning conflicts with the rural development of the surrounding area; (4) noise from the plant operations; (5) traffic from increased employment at the facility; and (6) demand on public utilities, including water and waste disposal.

As noted above, some of the project's objectives are to assist California in meeting its GHG emission reduction goals through establishing solar PV power-generating facilities to produce reliable electricity in an economically feasible and commercially financeable while minimizing environmental impacts and using proven and established PV technology that is efficient, requires low maintenance and is recyclable. Alternatives may be eliminated from detailed consideration in an EIR if they fail to meet most of the project

objectives, are infeasible, or do not avoid or substantially reduce significant environmental effects. Therefore, this alternative was eliminated from further consideration because:

- It would result in additional/greater impacts than the project (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 emission reduction objectives as this alternative would use non-renewable energy to produce electricity.

### **Alternative Site**

This alternative would involve the development of the project on another site located within Kern County, other than constructing rooftop distributed generation systems. Although undetermined at this time, the alternative project site would likely be located in Southern San Joaquin Valley, similar to the project. This alternative is assumed to involve construction of a 115 MW PV solar facility with the ability to store up to 80 MW in a BESS on a site totaling 650 acres. *CEQA Guidelines* 15126.6(f)(2(a) states that the key and initial step in considering an alternative site is whether "any of the significant effects of the project would be avoided or substantially lessened" in relocating the project, while remaining consistent with the same basic objectives of the project.

Southern San Joaquin 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 Southern San Joaquin 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, and biological resources. This is based on the known general conditions in the area and the magnitude of the project.

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

# **1.7.2** Alternatives Selected for Analysis

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

- Alternative 1: No Project Alternative
- Alternative 2: Agricultural Production Alternative
- Alternative 3: Reduced Acreage Alternative
- Alternative 4: No Ground-Mounted Utility-Solar Development Alternative Distributed Commercial and Industrial Rooftop Solar Only

**Table 1-6**, *Summary of Development Alternatives*, on the following page provides a summary of the relative impacts and feasibility of each alternative and **Table 1-7**, *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.

Alternative	Description	Basis for Selection and Summary of Analysis
Project	Construction and operation of a solar facility on approximately 650 acres would generate up to 115 MW of electricity with a 220 kV gen-tie at the existing Pastoria Energy Facility (PEF) switchyard and/or at the onsite substation. The power would then be delivered via 220 kV circuits to a SCE grid at the Pastoria Substation. Approval of the GPA, CUP and Williamson Act Contract Cancellation for construction and operation of commercial solar electrical generating facilities would be required.	N/A
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	<ul> <li>Required by CEQA</li> <li>Avoids need for GPA, CUP, and Williamson Act Contract Cancellation</li> <li>Avoids all significant and unavoidable impacts</li> <li>Greater impacts to greenhouse gas (GHG) emissions</li> <li>Less impact in all remaining environmental issue areas</li> </ul>
Alternative 2: Agricultural Production Alternative	Project site would be developed with active agricultural production as allowed under the Kern County General Plan land use designations and zoning classifications and other existing applicable restrictions.	<ul> <li>Avoids need for GPA, CUP, and Williamson Act Contract Cancellation</li> <li>Similar impacts to air quality</li> <li>Greater impacts to energy, GHG emissions, hydrology and water quality, public services, transportation, and utilities and services systems as it relates to water supply</li> <li>Less impacts in all remaining environmental issue areas</li> </ul>
Alternative 3: Reduced Acreage Alternative	Construction and operation of solar facility on approximately 486 acres. This alternative is still expected to contain enough land to construct a solar array field capable of generating approximately 86 MW. The project site would require GPA, CUP, and Williamson Act Contract Cancellation approval.	<ul> <li>Similar impacts to hazards and hazardous materials, land use and planning, mineral resources, public services, and tribal cultural resources</li> <li>Greater overall impacts to GHG emissions</li> <li>Less impact in all remaining environmental issue areas</li> </ul>

 TABLE 1-6:
 SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis			
Alternative 4: No Ground-Mounted Utility-SolarThe construction of distributed on r Southern San Joaqu generated would be r Distributed Commercial and Industrial Rooftop Solar Only	The construction of 115 MW of PV solar distributed on rooftops throughout Southern San Joaquin Valley. Electricity generated would be for on-site use only.	•	Avoids need for GPA, CUP, and Williamson Act Contract Cancellation 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		
			Reduces significant and unavoidable cumulative impacts associated with wildfires		
Omy		•	Greater impacts to GHG emissions and land use and planning		
		•	Similar impacts to energy and tribal cultural resources		
		٠	Less impact in all remaining issue areas		

### TABLE 1-7: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: Agricultural Production Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and unavoidable (project and cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agriculture and Forestry Resources	Significant and unavoidable (project and cumulative)	Less (NI)	Less (NI)	Less (SU)	Less (NI)
Air Quality	Significant and unavoidable – construction (project and cumulative)	Less (NI)	Similar (SU)	Less (SU)	Less (LTS)
	Less than significant with mitigation - operation (project and cumulative)				
Biological Resources	Less than significant with mitigation (project)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
	Significant and unavoidable (cumulative only)				
Cultural Resources	Less than significant with mitigation	Less (NI)	Less (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)	Less (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)	Less (LTS)	Similar (LTS)	Less (LTS)
Hydrology and Water Quality	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Land Use and Planning	Less than significant with mitigation	Less (NI)	Less (NI)	Similar (LTS)	Greater (LTS)

### TABLE 1-7: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: Agricultural Production Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility-Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Mineral Resources	Less than significant	Less (NI)	Similar (LTS)	Similar (LTS)	Less (NI)
Noise	Less than significant	Less (NI)	Less (LTS)	Less (LTS)	Less (LTS)
Public Services	Less than significant with mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Transportation	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Tribal Cultural Resources	No impact	Similar (NI)	Less (LTS)	Similar (NI)	Similar (NI)
Utilities and Service Systems	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Wildfires	Significant and unavoidable (cumulative only)	Less (NI)	Less (LTS)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	Most	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 project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the (up to) 115 MW solar PV facility on the 650-acre site would not occur. The No Project Alternative would not require the GPA, CUP, and Williamson Act Land Use Contract Cancellation for construction and operation of a 115 MW solar project. The No Project Alternative would maintain the current zoning, land use classifications, and existing land uses, which consist mostly of undeveloped open space and grazing land. No physical changes would be made to the project site.

# **1.7.4** Alternative 2: Agricultural Production Alternative

Alternative 2, the Agricultural Production Alternative, would develop the project site for active agricultural production. The project site is designated as Kern County General Plan map codes 8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard), 8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard), and 8.4/2.5 (Mineral and Petroleum/Flood Hazard).

All four parcels are currently located within the A (Exclusive Agriculture) Zone District. No solar facilities would be developed under this alternative and, therefore, no general plan amendment, Conditional Use Permit or Williamson Act Contract cancellation would be required for this alternative. The project site would be developed in accordance with the existing agricultural zone designations.

Implementation of Alternative 2 would consist of developing the project site under the current land use classification of 8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard), 8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard), and 8.4/2.5 (Mineral and Petroleum/Flood Hazard). The 8.1/2.5 (Intensive Agriculture [Min 20 Acres] land use designation applies to areas devoted to the production of irrigated crops or having a potential for such use. Typical uses include irrigated cropland, farm facilities and related uses, livestock grazing, water storage and groundwater recharge areas, mineral, aggregate, and petroleum exploration and extraction, public utility uses, and agricultural industries. The 8.3 land use designation applies to agricultural uses involving large amounts of land with relatively low value per acre yields. Typical uses include livestock grazing, farming and woodlands. The 8.4 land use designation applies primarily to areas which contain producing or potentially productive petroleum fields, natural gas, and geothermal resources, and mineral deposits of regional and Statewide significance. Typical uses include resource extraction. The 2.5 land use designation is an overlay designation that applies to Flood Zones.

Given the land use and zoning designations described above, this alternative would include the development of agricultural production on the entire project site and associated infrastructure for agricultural production such as irrigation systems. No GPA or CUPs for solar facility construction and operation would be required for this alternative. In addition, the Williamson Act Contract, which is set to expire in 2023, would not need to be cancelled under this alternative as the proposed uses would be allowed under this contract.

# **1.7.5** Alternative 3: Reduced Acreage Alternative

Under Alternative 3, the Reduced Acreage Alternative, the eastern parcels would be developed with a solar facility with the capacity to generate up to 86 MW of renewable electric energy. Under this alternative, the

southwestern parcel would not be developed for solar energy production and would remain undeveloped for grazing land, as it is currently used. The gen-tie interconnection would remain unchanged. Development of the remaining parcels would include construction of a substation, a BESS, and associated infrastructure, as under the project, and would be located on an approximately 4.5-acre portion of the eastern parcels. Eliminating development of the southwestern parcel from the project would reduce the project's total generation capacity from 115 MW to 86 MW, and reduce the developed area from approximately 650 acres to approximately 486 acres. Similar to the project, this alternative would require a GPA, CUP, and Williamson Act Contract Cancellation for construction and operation of a commercial solar electrical generating facility. The easement on the southwestern parcel would also not be required to be lifted under this alternative.

# 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 kilowatt hours to 1 MW) within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the southern portion of the San Joaquin Valley, within unincorporated Kern County (Southern San Joaquin 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 650 acres of total rooftop area) may be required to attain project's capacity of 115 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 115 MW of electricity, but it would be for onsite use only. This alternative assumes that rooftop development would occur primarily on commercial and industrial structures due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed onsite by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities.

### **1.7.7** Environmentally Superior Alternative

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

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

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

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Environmentally Superior Alternative is considered to be the No Ground-Mounted Utility-Solar Development Alternative. This alternative would avoid significant and unavoidable impacts to aesthetics, air quality, biological resources, and wildfire. Impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology. This alternative would also result in greater impacts to land use as it would require extensive discretionary actions, such as design review, CUPs, or zone variances, depending on local jurisdictional requirements and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, this alternative would result in less impact to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, noise, public services, transportation, and utilities and service systems. Thus, for most environmental issue areas, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the project.

It is important to note that it is considered to be impracticable and infeasible to construct the No Ground-Mounted Utility-Solar Development Alternative within the same timeframe and/or with the same efficiency as the project because the project proponent lacks control and access to the sites required to develop 115 MW of distributed solar generated electricity and the required land to support up to 80 MW of energy storage. In addition, this alternative would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Nonetheless, because this alternative reduces impacts to a greater degree than the General Plan and Zoning Build-Out Alternative and Reduced Acreage Alternative, the Agricultural Production 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 traffic

# **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 1-8 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.

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.1 Aesthetics			
<b>Impact 4.1-1:</b> The project would have a substantial adverse effect on a scenic vista.	Less than significant	No mitigation would be required.	Less than significant
<b>Impact 4.1-2:</b> The project would substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	No impact	No mitigation would be required.	No impact
<b>Impact 4.1-3:</b> 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	<ul> <li>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:</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul>	Significant and unavoidable

### TABLE 1-8: 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 containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.	
		<b>MM 4.1-2:</b> 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 gen-tie poles, array facilities, etc. blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.	
		<b>MM 4.1-3:</b> Wherever possible, within the project boundary the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the project boundary shall remain in place as permitted by Fire Code. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department for review and approval. The plan shall include the measures detailed below.	
		a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants and/or allowed to revegetate 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.	
		<ul> <li>b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, (4) a list of the consultation efforts completed, (5) the methods and schedule for installation of fencing that</li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		complies with wildlife agency regulations, and (6) a clear prohibition of the use of toxic rodenticides.	
		c. Ground cover shall include native seed mix and shall be spread where earthmoving activities have taken place, as needed to establish re-vegetation. The seed mix or native plants shall be determined through consultation with professionals such as landscape architect(s), horticulturist(s), botanist(s), etc. with local knowledge as shown on submitted resume and shall be approved by the Kern County Planning and Natural Resources Department prior to planting. Phased seeding may be used if a phased construction approach is used (i.e., the entire site need not be seeded all at the same time).	
		d. Vegetation/ground cover shall be continuously maintained on the site by the project operator.	
		e. The re-vegetation and restoration of the site shall be monitored annually for a three-year period following restoration activities that occur post-construction and post-decommissioning. Based on annual monitoring visits during these three-year periods, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for the three-year period. Should efforts to revegetate with the existing native seed bank in the top soil prove in the second year to not be successful by 75 percent cover rate, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department and an additional year shall be added to the monitoring program to ensure coverage is achieved. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the project, where feasible.	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.1-4:</b> 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	<b>MM 4.1-4:</b> 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 <i>Dark Skies Ordinance</i> (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.	Less than significant
		<b>MM 4.1-5:</b> 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.	
		<b>MM 4.1-6:</b> 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.	
Impact 4.1: Cumulative Impacts	Potentially Significant	Implementation of Mitigation Measures MM 4.1-1 through MM 4.1-6 is required.	Significant and unavoidable (Visual Character)
			Less than significant (Scenic Vista, Scenic Resource; Light and Glare)

TABLE 1-8:         SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICAN
--

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.2 Agriculture and Forestry Reso	urces		
<b>Impact 4.2-1:</b> The project would Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.	Less than significant	No mitigation would be required.	Less than significant
<b>Impact 4.2-2:</b> 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
<b>Impact 4.2-3:</b> 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
<b>Impact 4.2-4:</b> 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

### TABLE 1-8: Summary of Impacts, Mitigation Measures, and Levels of Significance

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.2-5:</b> 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 4.9-1 and MM 4.9-3 would be required (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation measure text).	Less than significant
<b>Impact 4.2-6:</b> 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)).	Potentially significant	No feasible mitigation is available.	Significant and unavoidable
Impact 4.2: Cumulative Impacts	Potentially significant	No feasible mitigation is available.	Significant and unavoidable
4.3 Air Quality			
<b>Impact 4.3-1:</b> The project would conflict with or obstruct implementation of the applicable air quality plan.	Potentially significant	<b>MM 4.3-1:</b> The project shall continuously comply with the following: Construction and operation of the project shall be conducted in compliance with applicable rules and regulations set forth by the San Joaquin Valley Air Pollution Control District. Dust control measures outlined below shall be implemented where they are applicable and feasible. The list shall not be considered all-inclusive, and any other measures to reduce fugitive dust emissions not listed shall be encouraged. a. Land Preparation, Excavation and/or Demolition. The following	Less than significant
		<ul> <li>dust control measures shall be implemented:</li> <li>i. All soil excavated or graded shall be sufficiently watered to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soil areas. Watering shall take place a minimum of twice daily on unpaved/untreated roads and on disturbed soil areas with active operations.</li> </ul>	

TABLE 1-8:	SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE
------------	---

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		ii. All clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 20 miles per hour (averaged over one hour), if disturbed material is easily windblown, or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures, or neighboring property.	
		<li>iii. All fine material transported off site shall be either sufficiently watered or securely covered to prevent excessive dust.</li>	
		iv. Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.	
		v. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.	
		vi. Where acceptable to the Kern County Fire Department, weed control shall be accomplished by mowing instead of disking, thereby, leaving the ground undisturbed and with a mulch covering.	
		b. Site Construction. After clearing, grading, earth moving and/or excavating is completed within any portion of the project sites, the following dust control practices shall be implemented:	
		<ul> <li>i. Once initial leveling has ceased, all temporality open and inactive soil areas within the construction site shall be (1) seeded and watered until plant growth is evident, (2) treated with a dust palliative, or (3) watered twice daily until soil has sufficiently crusted to prevent fugitive dust emissions.</li> </ul>	
		ii. Dependent on specific site conditions (season and wind conditions), revegetation shall occur in those areas so planned as soon as practical after installation of the solar panels. A native seed mix of grass and flowers shall also be added to the spread topsoil to enhance regrowth.	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<li>iii. All active disturbed soil areas shall be sufficiently watered at least twice daily or have dust palliatives applied to prevent excessive dust.</li>	
		c. Vehicular Activities. During all phases of construction, the following vehicular control measures shall be implemented:	
		i. Onsite vehicle speed shall be limited to 15 miles per hour.	
		ii. All areas with vehicle traffic shall be paved, treated with dust palliatives or watered a minimum of twice daily.	
		<li>iii. Streets adjacent to the project sites shall be kept clean, and project-related accumulated silt shall be removed.</li>	
		iv. Access to the project sites shall be by means of an apron into the project sites from adjoining surfaced roadways. The aprons shall be surfaced or treated with dust palliatives. If operating on soils that cling to the wheels of vehicles, a grizzly, wheel washer, or other such device shall be used on the road exiting the project sites, immediately prior to the pavement, in order to remove most of the soil material from vehicle tires.	
		<b>MM 4.3-2:</b> Prior to issuance of any grading permit, the project proponent shall submit a Site-Specific Dust Control Plan for review and approval by the Kern County Planning and Natural Resources Department. The Site-Specific Dust Control Plan shall serve to minimize fugitive dust emissions during project construction. The Site-Specific Dust Control Plan shall take into consideration grading and construction schedule, seasonal winds, site-specific wind patterns and soil conditions to ensure adequate measures are implemented to manage fugitive dust. The Site-Specific Dust Control Plan shall:	
		a. Identify a comprehensive grading schedule for the entire project site. When feasible, grading activities shall be minimized to those areas necessary for project access and installation of solar panels and other areas of infrastructure associated with the solar facility.	

### TABLE 1-8: Summary of Impacts, Mitigation Measures, and Levels of Significance

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		b. The Site-Specific Dust Control Plan shall identify, in addition to those measures required by the air district, all measures being undertaken during construction activities and operational activities to ensure fugitive dust being blown off site is minimized. Measures may include, but are not limited to:	
		i. Use of water trucks as required for the expected level of winds in the area.	
		ii. Use of dust suppressant (i.e., soil binders or mulch).	
		iii. Pre-seeding and irrigating prior to construction to create vegetation with useful root structures.	
		iv. Construction of dust screening in appropriate locations around the project site (i.e., fence slats or mesh screening).	
		v. A copy of the approved Site-Specific Dust Control Plan shall be kept at the on-site construction office and all measures included in the Site-Specific Dust Control Plan shall be included on all Grading Plans issued for the project by the Kern County Public Works Department.	
		<b>MM 4.3-3:</b> Prior to issuance of any building and grading permits, the project proponent shall provide the Kern County Planning and Natural Resources Department with proof that an Indirect Source Review application has been approved by the San Joaquin Valley Air Pollution Control District.	
		<b>MM 4.3-4: Valley Fever.</b> Prior to ground disturbance activities, the project proponent shall implement the following Valley Fever Provisions:	
		a. Provide evidence to the Kern County Planning and Natural Resources Department that the project operator and/or construction manager has developed a "Valley Fever Training Handout", training, and schedule of sessions for education to be provided to all construction personnel. All evidence of the training session materials, handout(s) and schedule shall be submitted to the Kern County Planning and Natural Resources Department within 24 hours of the first training session. Multiple training sessions may be conducted if different work	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		crews will come to the site for different stages of construction; however, all construction personnel shall be provided training prior to beginning work. The training may be administered using video or other electronic media. The evidence submitted to the Kern County Planning and Natural Resources Department regarding the "Valley Fever Training Handout" and Session(s) shall include the following:	
		i. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session.	
		ii. Distribution of a written flier or brochure that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever.	
		iii. Training on methods that may help prevent Valley Fever infection.	
		iv. A demonstration to employees on how to use personal protective equipment, such as respiratory equipment (masks), to reduce exposure to pollutants and facilitate recognition of symptoms and earlier treatment of Valley Fever. Where respirators are required, the equipment shall be readily available and shall be provided to employees for use during work. Proof that the demonstration is included in the training shall be submitted to the county. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs.	
		b. The project proponent also shall consult with the Kern County Health Services Department to develop a Valley Fever Dust Management Plan that addresses the potential presence of the Coccidioides spore and mitigates for the potential for Coccidioidomycosis (Valley Fever). Prior to issuance of permits, the project operator shall submit the Plan to the Kern County Public Health Department for review and approval. The Plan shall include a program to evaluate the potential for exposure to Valley Fever from construction activities and to identify appropriate safety procedures that shall be	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		implemented, as needed, to minimize personnel and public exposure to potential Coccidioides spores. Measures in the Plan shall include the following:	
		i. Provide High-Efficiency Particulate Air filters for heavy equipment equipped with factory enclosed cabs capable of accepting the filters. Require contractors utilizing applicable heavy equipment to furnish proof of worker training on proper use of applicable heavy equipment cabs, such as turning on air conditioning prior to using the equipment.	
		ii. Provide communication methods, such as two-way radios, for use in enclosed cabs.	
		iii. Require National Institute for Occupational Safety and Health- approved half-face respirators equipped with minimum N-95 protection factor for use during worker collocation with surface disturbance activities, as required per the hazard assessment process.	
		iv. Cause employees to be medically evaluated, fit-tested, and properly trained on the use of the respirators, and implement a full respiratory protection program in accordance with the applicable California Occupational Safety and Health Administration Respiratory Protection Standard (8 CCR 5144).	
		v. Provide separate, clean eating areas with hand-washing facilities.	
		vi. Install equipment inspection stations at each construction equipment access/egress point. Examine construction vehicles and equipment for excess soil material and clean, as necessary, before equipment is moved off site.	
		vii. Train workers to recognize the symptoms of Valley Fever, and to promptly report suspected symptoms of work-related Valley Fever to a supervisor.	
		<ul> <li>Work with a medical professional to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever.</li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		ix. Work with a medical professional, in consultation with the County Health Services Department, to develop an educational handout for on-site workers and surrounding residents within 3 miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for exposure is available. Prior to construction permit issuance, this handout shall have been created by the project operator and reviewed by the project operator and reviewed by the County. No less than 30 days prior to any work commencing, this handout shall be mailed to all existing residences within 3 miles of the project boundaries.	
		<ul> <li>x. When possible, position workers upwind or crosswind when digging a trench or performing other soil-disturbing tasks.</li> <li>xi. Prohibit smoking at the worksite outside of designated smoking areas; designated smoking areas will be equipped with hendwaching facilities.</li> </ul>	
		xii. Post warnings on-site and consider limiting access to visitors, especially those without adequate training and respiratory protection.	
		<b>MM 4.3-5:</b> The project shall continuously comply with the following: The project proponent and/or its contractors shall implement the following measures during construction of the project:	
		a. All equipment shall be maintained in accordance with the manufacture's specifications.	
		b. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for extended periods of time.	
		c. Construction equipment shall operate longer than eight cumulative hours per day.	

 TABLE 1-8:
 SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		d. Electric equipment shall be used whenever possible in lieu of diesel- or gasoline-powered equipment.	
		e. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NO <sub>X</sub> emissions.	
		f. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines.	
		g. Tier 3 engines shall be used on all equipment when available.	
		<b>MM 4.3-6:</b> The other unpaved roads at the project sites shall be stabilized using water or soil stabilizers so that vehicle travel on these roads does not cause visible dust plumes:	
		a. Any unpaved access roads used by employees and/or for deliveries shall be paved or effectively stabilized using soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than the California Air Resources Board-approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation.	
		b. The other unpaved roads at the project sites shall be stabilized using water or soil stabilizers so that vehicle travel on these roads does not cause visible dust plumes.	
		c. Traffic speeds on unpaved roads shall be limited to no more than 15 miles per hour. Traffic speed signs shall be displayed prominently at all site entrances and at egress point(s).	
		<b>MM 4.3-7:</b> The project proponent shall continuously comply with the following measures during operation of the project to control emissions from the on-site dedicated equipment (equipment that would remain on-site each day):	
		a. All onsite off-road equipment and on-road vehicles for operation/maintenance shall be new equipment that meets the recent the California Air Resources Board engine emission standards or alternatively fueled construction equipment, such	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		as compressed natural gas, liquefied natural gas, or electric, as appropriate.	
		b. All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized.	
		c. All equipment engines shall be maintained in good operating condition and in tune per manufacturers' specification.	
		<b>MM 4.3-8:</b> Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading), including decommissioning, the project proponent shall provide written notice to the public through mailing a notice to all parcels within 1,000 feet of the project site, no sooner than 15 days prior to construction activities. The notices shall include the construction schedule, a telephone number and email address where complaints and questions can be registered. Additionally, a minimum of one sign, legible at a distance of 50 feet, shall also be posted at the construction sites or adjacent to the nearest public access to the main construction entrances throughout construction activities which include the construction schedule (updated as needed) and a telephone number where complaints can be registered. Documentation that the public notice has been sent and the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department.	
		<b>MM 4.3-9:</b> Prior to the issuance of any grading or building permit, the project proponent shall establish a "construction coordinator" and submit written documentation which includes their phone number, email address and mailing address. The construction coordinator shall be responsible for the following:	
		a. Responding to any local complaints about construction activities. The construction coordinator shall determine the cause of the construction complaint and shall be required to implement reasonable measures such that the complaint is resolved.	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		b. Ensuring all appropriate construction notices have been made available to the public and that all appropriate construction signs have been installed.	
		c. Maintaining an ongoing up-to-date log of all construction related complaints (i.e., blowing dust, inability to access parcels, etc.) during project construction activities. The log shall include the nature of the complaint and the measures that were undertaken to address the concerns. Upon request, the construction coordinator shall provide the log to the Planning and Natural Resources Department no later than three business days from request.	
<b>Impact 4.3-2:</b> The project would expose sensitive receptors to	Potentially significant	Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9 would be required.	Significant and Unavoidable
substantial pollutant concentrations.		<b>MM 4.3-10:</b> 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 Department for review and approval.	
		<b>MM 4.3-11:</b> Prior to the issuance of grading permits, a one-time fee shall be paid to the Kern County Public Health Services Department in the amount of \$3,200 for Valley Fever public awareness programs.	
<b>Impact 4.3-3:</b> 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

	,		
Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.3-1 through MM 4 3-10 would be required	Significant and
result in a cumulatively considerable		nin no io voula co requirea.	(Construction and
net increase of any criteria pollutant			Decommissioning)
for which the projects' region is			Less than significant
nonattainment under applicable			(Operation)
federal or State ambient air quality			
standards.			

 TABLE 1-8:
 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			
<b>Impact 4.4-1:</b> The project would have a substantial adverse effect, either directly or through habitat modifications, on any species	Potentially significant	Implementation of Mitigation Measures MM 4.1-4, MM 4.1-5, MM 4.3-1, MM 4.3-2, MM 4.3-6, and MM 4.9-3 would be required (see Sections 4.1, <i>Aesthetics</i> ; 4.2, <i>Air Quality</i> ; and 4.9, <i>Hazard and Hazardous Materials</i> , for full mitigation measure text).	Less than significant
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.		<b>MM 4.4-1:</b> Prior to the issuance of grading or building permits from the County, the project proponent/operator shall retain a qualified biologist(s) who meets the qualifications of an authorized biologist as defined by U.S. Fish and Wildlife Service to oversee compliance with protection measures for all listed and other special-status wildlife species that may be affected by the construction operation, and decommissioning of the project. The following measures pertain to qualified biologists on site:	
		a. The qualified biologist(s) shall be on the project site during construction of perimeter fencing, clearing of vegetation, grading activities, and similar ground-disturbance activities that will be associated with the construction phase.	
		b. The qualified biologist(s) shall have the right to halt activities that are in violation of the special-status species mitigation measures, as well as any regulatory permits from the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife, if applicable. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk, or at the qualified biologist's discretion.	
		c. The qualified biologist(s) shall maintain a copy of applicable permits and biology-related plans on the project site.	
		<ul> <li>d. The qualified biologist(s) shall have in her/his possession a copy of all the mitigation measures while work is being conducted on the project site.</li> </ul>	
		e. Prior to issuance of grading or building permits, contact information for the qualified biologist(s) shall be submitted to the Kern County Planning and Natural Resources Department.	
		f. Individuals involved in biological monitoring shall be supervised by the qualified biologist(s) and shall have the	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		appropriate experience to accomplish biological monitoring. Biological monitors shall comply with the above measures.	
		<b>MM 4.4-2:</b> Prior to the issuance of grading or building permits and for the duration of construction activities, and within a minimum of one week of initial ground disturbance at the project site, staging areas and/or transmission corridors, all construction workers shall attend a Worker Environmental Awareness Training and Education Program that will be developed by a qualified biologist. The Worker Environmental Awareness Training and Education Program that were by a qualified biologist(s) or designee approved by the qualified biologist(s) and may be conducted in person or via videotape or other electronically recorded media.	
		Any personnel associated with construction that did not attend the initial Worker Environmental Awareness Training and Education Program training shall have Worker Environmental Awareness Training and Education Program training. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training and Education Program prior to starting work on the project and on an annual basis.	
		Onsite employees responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training and Education Program prior to operations or decommissioning. The Worker Environmental Awareness Training and Education Program will be developed and presented by a qualified biologist(s) or designee approved by the qualified biologist(s). The Worker Environmental Awareness Training and Education Program shall include the components described below.	
		a. Information on the life history and identification of the blunt- nosed leopard lizard, burrowing owl, California condor, raptor species, San Joaquin kit fox and American badger; as well as other wildlife, special-status plant species, and the California Department of Fish and Wildlife–regulated drainages that may be affected during construction activities. The Worker	

Impost	Level of Significance	Mitigation Magguros	Level of Significance
Impact		Environmental Awareness Training and Education Program shall also discuss the legal protection status of each species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements. The Worker Environmental Awareness Training and Education Program shall also discuss the measures outlined in Mitigation Measure MM 4.4-4 though MM 4.4-10.	and imigation
		<ul> <li>b. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education Program has been completed shall be kept on file on site.</li> <li>a. A corputed the training transported and/or training video as well</li> </ul>	
		c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education Program and signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department.	
		d. A copy of the training transcript, training video or informational binder for specific procedures shall be kept available for all personnel to review and be familiar with as necessary.	
		e. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.	
		<b>MM 4.4-3:</b> During construction, and decommissioning, the project proponent/operator and/or contractor(s) shall implement the general avoidance and protective measures described below.	

Impact	Level of Significance before Mitigation	М	itigation Measures	Level of Significance after Mitigation
		a.	Prior to conducting vegetation clearing or grading activities associated with construction or decommissioning, a qualified biologist or biological monitor that has been approved by the qualified biologist shall perform pre-construction visual surveys of the area immediately prior to conducting these activities to ensure that no special-status animals are present. The qualified biologist or biological monitor shall monitor all initial construction and decommissioning ground disturbance activities. A report of those activities shall be submitted to the Kern County Planning and Natural Resources Department within 30 days of completion of activities.	
		b.	Sensitive biological resources (i.e., special-status species, jurisdictional drainages, nesting birds, etc.) within proposed impact areas, including solar fields, generator-tie lines, staging areas, access routes, and areas of disposal or temporary placement of spoils shall be delineated with stakes and/or flagging prior to construction to avoid sensitive biological resources where possible. Construction-related activities outside of the planned impact areas shall be avoided.	
		c.	Access roads that are planned for use during construction shall not extend beyond the planned impact area. All vehicle traffic shall be contained within the planned impact areas or in previously disturbed areas. Where new access routes are required, the route will be clearly marked (i.e., flagged and/or staked) prior to construction.	
		d.	The project proponent/operator shall minimize the areas of disturbance. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. These areas shall be demarcated and disturbance activities, vehicles, and equipment shall be confined to these areas.	
		e.	Spoils shall be stockpiled in disturbed areas that lack native vegetation to the maximum extent practicable. Best Management Practices shall be employed to prevent erosion in accordance with the project's approved Stormwater Pollution	

 TABLE 1-8:
 SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE
Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul> <li>Prevention Plan (see Section 4.7, <i>Geology and Soils</i>, for more details on Stormwater Pollution Prevention Plan requirements).</li> <li>All detected erosion shall be remedied as described in the Erosion Control Plan of the Stormwater Pollution Prevention Plan. Spoils that have been stockpiled and inactive for greater than 10 days shall be inspected by a qualified biologist for signs of special-status wildlife before moving or disturbing the spoils.</li> </ul>	
		f. To prevent inadvertent entrapment of San Joaquin kit foxes, American badgers, or other animals during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks that are no less than 12 inches wide and secured at the top, and placed a minimum of every 100 feet within the open trench. Covered and non-covered holes or trenches shall be thoroughly inspected for trapped animals by a qualified biologist or their biological monitor at the beginning and end of each day. Immediately before such holes or trenches are filled, they shall again be thoroughly inspected by trained staff approved by the retained qualified biologist for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow for their escape. If a listed species is trapped, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife, as appropriate for the species, and Kern County Planning and Natural Resources Department shall be contacted immediately.	
		g. San Joaquin kit fox, burrowing owls, mammals, and nesting birds may use construction pipes, culverts, or similar structures for refuge or nesting. Therefore, all construction pipes, culverts, or similar structures with a diameter of 4 inches or more that are stored at the construction site for one or more overnight periods, and without endcaps, shall be thoroughly inspected by a qualified biologist or the designated biological monitor 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	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		shall not be moved until a qualified biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by a qualified biologist holding the appropriate handling permits from the Resource Agencies.	
		h. No vehicle or equipment parked on the project site shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of wildlife. If present, the animal shall be left to move on its own.	
		i. Vehicular traffic to and from the project site shall use existing routes of travel. Cross country vehicle and equipment use outside designated impact areas shall be prohibited.	
		j. A speed limit of 15 miles per hour shall be enforced within the limits of the project. If night work occurs on the project, the speed limit will be 10 miles per hour.	
		k. Fueling of equipment shall take place within existing roads. No refueling within or adjacent to drainages (within 150 feet) shall be permitted. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary.	
		1. The project proponent/operator shall submit a Maintenance, Trash Abatement, and Pest Management Program to the Kern County Planning and Natural Resources Department for review and approval. The Maintenance, Trash Abatement, and Pest Management Program shall include, but not be limited to the following:	
		i. The project proponent/operator shall clear debris from the project area at least twice per year once the project is operational; this can be done in conjunction with regular panel washing and site maintenance activities.	
		ii. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		iii. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.	
		<ul> <li>iv. The project proponent/operator shall implement a regular trash removal and recycling program once per month on an ongoing basis during construction, including a recycling program. Barriers/locking systems to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.</li> </ul>	
		m. Workers shall be prohibited from bringing pets and firearms to the project site and from feeding wildlife.	
		n. Intentional killing or collection of any plant or wildlife species shall be prohibited.	
		o. No rodenticides shall be used on the project site.	
		p. Perimeter fencing during operations shall be made wildlife friendly by raising the bottom up 5 to 7 inches from the ground and knuckling back the bottom edge to allow movement of San Joaquin kit fox.	
		<b>MM 4.4-4:</b> The project proponent/operator shall implement the following measures to ensure potential impacts to California condor resulting from project implementation and decommissioning activities will be avoided or minimized to less-than-significant levels:	
		If condors are observed landing in or near the construction site, construction within 500 feet of the sighting will cease until the bird(s) have left the area, or as otherwise authorized by the U.S. Fish and Wildlife Service and the California Department of Fish and	

<b>TABLE 1-8:</b>	SUMMARY OF IMPACTS, MITIGAT	ION MEASURES, AND LEVELS OF SIGNIFICAN	CE
-------------------	-----------------------------	--	----

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		Wildlife. Should U.S. Fish and Wildlife Service notify the project team that condors are roosting within 0.5 miles of the construction area, no construction activity shall occur between 1 hour before sunset to 1 hour after sunrise or until the condors leave the area, or as otherwise directed by the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife will be notified with 24 hours of an encounter with a California condor within the disturbance zone and a 200-foot buffer around.	
		<b>MM 4.4-5:</b> 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 more than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading, tilling, trenching, installation of piles, etc.) and again within 24-hours of starting ground disturbing activities associated with construction and decommissioning activities. The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife 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. Specifics on avoidance buffers for occupied burrows during the breeding and non-breeding periods are as follows.	
		a. A qualified wildlife biologist shall be on site during all initial grading and construction, pre-construction ground disturbing activities, and decommissioning activities. A qualified wildlife biologist (i.e., a wildlife biologist with the ability to identify the species and possessing previous burrowing owl survey and avoidance and minimization protection experience) shall conduct pre-construction surveys of all areas that will be permanently or temporary impacted, plus a 200-meter (approximately 656-foot) buffer, to locate active breeding or wintering burrowing owl burrows.	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		b. The survey(s) shall occur no more than 14 days prior to ground- disturbing activities (i.e., vegetation clearance, grading) or decommissioning. The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting and mapping any potential burrows with burrowing owl signs or presence of burrowing owls.	
		c. As each burrow is investigated, project biologists shall also look for signs of American badger and desert kit fox. A biologist shall prepare a preconstruction survey report that shall be submitted to California Department of Fish and Wildlife and the Kern County Planning and Natural Resources Department.	
		d. A qualified biologist shall conduct an additional preconstruction survey of all impact areas plus an approximately 200-meter buffer no more than 24 hours prior to start or restart of ground disturbing activities associated with construction or decommissioning activities as authorized by this approval to identify any additional burrowing owls or burrows necessitating avoidance, minimization, or mitigation measures.	
		e. If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted within 200 meters of an occupied burrow during the breeding season (February 1–August 31), unless authorized by California Department of Fish and Wildlife. During the non-breeding season (September 1–January 31), no ground-disturbing activities shall be permitted within 50 meters (165 feet) of an occupied burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with California Department of Fish and Wildlife.	
		f. If burrow avoidance is infeasible during the non-breeding season or during the breeding season where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		program in accordance with Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation.	
		g. If passive relocation is required, the qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and Mitigation Land Management Plan in accordance with 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation Land.	
		h. If passive relocation is required, the project proponent shall implement the Mitigation Land Management Plan and permanently conserve in a conservation easement offsite habitat suitable for burrowing owl at ratio of 15 acres per passively relocated burrowing owl pair, not to exceed the size of the final project footprint. Land identified to mitigate for passive relocation of burrowing owl may be combined with other offsite mitigation requirements of the project if the compensatory habitat is deemed suitable to support the species. The Passive Relocation Compensatory Mitigation habitat shall be approved by California Department of Fish and Wildlife. If the project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits in lieu of placing offsite habitat into a conservation easement, if acceptable to California Department of Fish and Wildlife.	
		<b>MM 4.4-6:</b> The project proponent/operator shall implement the following measures to ensure potential impacts to San Joaquin kit fox resulting from project implementation and decommissioning activities will be avoided and minimized to less-than-significant levels:	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		a. Pre-construction surveys shall be conducted within the disturbance zone and a 200-foot buffer around the disturbance zone in suitable habitat within 14 days prior to the beginning of each construction area of grading or construction activity. Pre-construction surveys will identify San Joaquin kit fox habitat features on the project site and evaluate use by San Joaquin kit fox. The status of all possible San Joaquin kit fox dens will be categorized as a potential, atypical, known, or pupping den type and will be mapped. The results of these surveys shall be submitted to the County and resource agencies (as required) within 5 days of survey completion and prior to commencement of ground disturbance and/or construction activities.	
		b. Biological monitor should be present while ground disturbing activities are occurring in suitable habitat if the preconstruction survey indicates that San Joaquin kit fox may be present. If San Joaquin kit fox dens are present, appropriate buffers will be established with highly visible markers according to the buffer distances, as described below by den type prior to construction activities:	
		i. San Joaquin kit fox potential or atypical den: If a potential or atypical den is found, placement of four or five flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required but the 50-foot exclusion zone must be observed. Essential vehicle operation on existing roads and foot traffic is permitted within the exclusion zones, but the speed limit shall be 15 miles per hour within the exclusion zone.	
		<ul> <li>ii. San Joaquin kit fox known den: If a known den is found, a 100-foot exclusion zone shall be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by San Joaquin kit fox. Acceptable fencing includes untreated wood particleboard, silt fencing, orange construction fencing, or other fencing as long as it has openings for San Joaquin kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction-related</li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		disturbances have ceased, or until the den has been monitored and a lack of San Joaquin kit fox activity is documented, as described under Den Excavation, below. At that time, all fencing shall be removed to avoid attracting post- construction attention to the dens, or the den can be excavated as described under Den Excavation, below.	
		c. San Joaquin kit fox natal/pupping den: If a San Joaquin kit fox natal/pupping den is documented during pre-construction surveys, a 200-foot exclusion zone shall be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by San Joaquin kit fox. Acceptable fencing includes untreated wood particleboard, silt fencing, orange construction fencing, or other fencing as long as it has openings for San Joaquin kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction-related disturbances have ceased, or until the den has been monitored and a lack of San Joaquin kit fox activity is documented, as described under Den Excavation, below. At that time, all fencing shall be removed to avoid attracting post-construction attention to the dens, or the den can be excavated.	
		d. Buffer distances and measures can be modified with prior authorization from U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.	
		e. Den Excavation: Based on the results of the pre-construction surveys, if avoidance of dens is not a reasonable alternative, limited destruction of San Joaquin kit fox dens may be allowed. Dens shall be fully excavated, filled with dirt, and compacted so that San Joaquin kit fox cannot reenter the den during the construction period. Hand excavation shall be used whenever feasible. If at any point during the excavation a San Joaquin kit fox is discovered inside the den, the excavation activity shall cease immediately, and the den shall be monitored as described below. Destruction of the den may be completed when, in the judgment of the project Lead Biologist, the animal has escaped without further disturbance. Excavation of dens shall be	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		conducted under the supervision of biologist, in accordance with U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to or during Ground Disturbance.	
		i. Absolutely no excavation of San Joaquin kit fox known dens shall occur without prior authorization from the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife. Destruction of any known or natal/pupping San Joaquin kit fox den requires take authorization from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.	
		ii. Natal/pupping dens: Natal/pupping dens that are occupied will not be destroyed until the pups and adults have vacated and consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife has occurred.	
		<ul> <li>iii. Known dens: Known dens within the project footprint must be monitored for 3 days/nights using a tracking medium or infrared camera stations to determine the current use. If no San Joaquin kit fox activity is observed during this period, the den shall be destroyed immediately to prevent future use. If San Joaquin kit fox activity is observed at the den, then the den shall be monitored for at least 4 consecutive days from the time of observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging the entrance(s) with soil in such a manner that any resident animal can escape easily. Once the den is determined to be unoccupied, then the den may be excavated. If the animal is still present after 4 or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of the project Lead Biologist, it is temporarily vacant; for example, during the animal's normal foraging activities.</li> </ul>	
		iv. Potential/atypical dens: If a take authorization/permit has been obtained from the U.S. Fish and Wildlife Service and	

Impost	Level of Significance	Mitigation Massuras	Level of Significance
Impact	before witigation	California Department of Fish and Wildlife, destruction of potential and atypical dens may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential and atypical dens should be monitored as if they were known dens. If any den was considered to be a potential or atypical den, but is later determined during monitoring or destruction to be currently or previously used by San Joaquin kit fox (e.g., if San Joaquin kit fox sign is found inside), then all construction activities shall cease and the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife shall be notified immediately.	aner mugauon
		f. To prevent inadvertent entrapment of San Joaquin kit fox 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 by plywood or similar materials or, or be provided with one or more escape ramps constructed of earth fill or wooden planks (wooden planks should be no less than 10 inches in width and should reach to bottom of trench and be installed at 1:1 slope). Before such holes or trenches are filled, they shall be thoroughly inspected for trapped San Joaquin kit fox.	
		g. Construction materials will not be stacked in a manner that allows San Joaquin kit fox to establish den sites within the material. Construction items such as solar panel and equipment transported to the project on pallets will be placed directly on the ground, and the pallets removed from the site. All 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 San Joaquin kit fox before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If San Joaquin kit fox is discovered inside a pipe, the project biologist shall flush the species from the pipe. If San Joaquin kit fox is discovered, that section of pipe shall not be moved until the U.S. Fish and	

 TABLE 1-8:
 SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		Wildlife Service and/or California Department of Fish and Wildlife has been consulted. If necessary, under the direct supervision of the project biologist, the pipe may be moved once to remove it from the path of construction activity until the species has escaped.	
		h. Unless biological monitors allow alterations to routes, all project vehicles should be confined to existing roads or prominently staked and/or flagged access routes that are surveyed prior to use.	
		i. Speed limits should be restricted to 15 miles per hour during daylight hours (5 am to 9 pm) and 10 miles per hour during night-time hours on the site and 25 miles per hour on public roads in the vicinity during both day and night-time driving.	
		j. Project will be constructed with appropriate kit fox-friendly standards, which includes fencing plan that will allow require kit-fox permeable fencing surrounding the site so that kit foxes can to pass through the project site. There will be no mass grading of the site.	
		<b>MM 4.4-7:</b> The project proponent/operator shall implement the following measures to ensure potential impacts to blunt-nosed leopard lizard resulting from project implementation and decommissioning activities will be avoided and minimized to less-than-significant levels:	
		Prior to grading, the project proponent shall conduct appropriate pre-construction surveys as identified below to avoid impacts to blunt-nosed leopard lizard.	
		a. All activities that will result in permanent or temporary ground disturbances should be preceded by a pre-construction survey within 14 days of construction by a qualified biologist(s). In addition, an additional pre-construction survey completed within 24 hours to the onset of construction will be conducted. The biologist(s) should identify and clearly mark the location of areas where any blunt-nosed leopard lizard were observed. If a blunt-nosed leopard lizard is observed within the project site, U.S. Fish and Wildlife Service and California Department of	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		Fish and Wildlife will be contacted to establish avoidance measures. If construction stops for longer than 2 weeks, a pre- construction survey will need to be conducted prior to construction starting again.	
		<ul> <li>b. A biological monitor(s) should be present while ground disturbing activities are occurring if the preconstruction survey indicates that blunt-nosed leopard lizard may be present. In addition to conducting preconstruction surveys, the biological monitors should aid crews in implementing/installing take avoidance measures for blunt-nosed leopard lizard and implementing project avoidance and mitigation measures. Biological monitors are empowered to order cessation of activities if an immediate threat of "take" is identified, if take avoidance and/or mitigation measures are violated, or if a blunt-nosed leopard lizard is located within the construction area.</li> </ul>	
		c. To prevent inadvertent entrapment of blunt-nosed leopard lizard, open holes, steep-walled holes, or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks (wooden planks should be more no less than 10 inches in width and should reach to bottom of trench and be installed at a 1:1 slope). Before such holes or trenches are filled, they should be thoroughly inspected by a biological monitor for trapped animals.	
		d. A project representative will be appointed who will be the contact source for any employee or contractor who inadvertently kills or injures a blunt-nosed leopard lizard or who finds a dead, injured, or entrapped individual blunt-nosed leopard lizard. The representative will be identified in the Worker Environmental Awareness Training and Education Program. U.S. Fish and Wildlife Service and California Department of Fish and Wildlife will be contacted immediately in the case of a dead, injured, or entrapped blunt-nosed leopard lizard by the chosen representative.	

<b>TABLE 1-8:</b>	SUMMARY OF IMPACTS, MITIGAT	FION MEASURES, AND LEVELS OF SIGNIFICANC
-------------------	-----------------------------	--

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		<ul><li>If blunt-nosed leopard lizard are detected during any identified survey of the project site, the following provisions will be implemented.</li><li>a. If blunt-nosed leopard lizard are observed within 50 feet of proposed disturbance areas during the clearance surveys, exclusion fencing shall be installed in such a manner as to provide the survey of the surv</li></ul>	
		to ensure that direct take of the species does not occur. The actual distance from the construction area where exclusion fencing is installed may depend on each construction site, but the fencing will be installed at a maximum 50-foot radius from the outermost edge of the construction impact zone, directed by the authorized biologist. The project biologist shall be on site during the fencing installation to ensure that no blunt-nosed leopard lizard are inadvertently harmed/harassed during installation.	
		b. Fencing shall provide escape routes from excluded construction areas to areas beyond the construction work area to enable blunt- nosed leopard lizard to move outside the excluded area away from construction activities. The fencing escape routes shall be closed to prevent blunt-nosed leopard lizard from reoccupying the area prior to commencing earth-disturbing activities. The fenced zone can be expanded in the project site, as necessary and following the same survey and escape route protocol described above, to exclude individual blunt-nosed leopard lizard from construction zones.	
		c. If blunt-nosed leopard lizard are observed or suspected (based on scat, tail drag marks, or other sign) of occurring within a fenced construction zone during the exclusion zone surveys, daily surveys shall be conducted for another consecutive 5 days from the date of the observation to allow sufficient time for individual blunt-nosed leopard lizard to vacate the excluded area.	
		<b>MM 4.4-8:</b> The project proponent/operator shall implement the following measures to ensure potential impacts to American badger	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		resulting from project implementation and decommissioning activities will be avoided and minimized to less-than-significant levels:	
		a. All activities that will result in permanent or temporary ground disturbances shall be preceded by a preconstruction survey conducted by a biological monitor within 14 days prior to the beginning of each construction area of grading or construction activity. The biologist(s) should identify and clearly mark the location(s) of areas where potential badger den(s) was/were identified. The surveys should be conducted in parallel transects spaced 30 feet apart.	
		b. It may be determined that a biological monitor(s) should be present while ground disturbing activities are occurring based on the sensitivity of the habitat. All known or occupied badger dens should be identified by highly visible flagging and avoided by a buffer with a radius determined by a biological monitor.	
		c. If one or more badger dens are found during the pre-activity survey, the following steps will be taken:	
		<ul> <li>The den will be carefully inspected to evaluate its activity status. If the biologist is uncertain about the activity status of a den, a tracking medium (such as diatomaceous earth) should be placed in front of the den for 3 consecutive nights. The tracking medium should be checked each following morning for tracks.</li> </ul>	
		<ul> <li>ii. If no tracks are observed after three nights of monitoring, the den can be considered to be inactive. It should be completely excavated with hand tools until it is certain that no badgers are inside. When excavation is completed, the den should be backfilled and compacted to ensure that no badgers can reenter the den during construction. If at any point during the excavation a badger is discovered inside the den, excavation should stop until the badger has been allowed to move away. Excavation should either be done by a qualified biologist or under the supervision of a qualified biologist.</li> </ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		d. If the den is active, it should be monitored for an additional five consecutive nights to allow badgers using the den to move to another den. The badger can be discouraged from continued use of the den by partially blocking the den entrance with soil. The soil should be placed in front of the den in such a manner that the resident badger is able to escape easily. When, in the judgement of the biologist, the badger has moved from the den, it should be excavated as explained above.	
		<b>MM 4.4-9:</b> To mitigate for potential impacts to nesting birds, special-status birds, and birds protected under the Migratory Bird Treaty Act and California Fish and Game Code during construction and decommissioning activities, the following measures shall be implemented as part of the approval for a grading or building permit.	
		<ul> <li>a. During the avian nesting season (February 1–August 31), a qualified biologist shall conduct a preconstruction avian nesting survey no more than 7 days prior to initial vegetation clearing. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur within 7 days prior to clearing or disturbance in specific areas of the site. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. At no time shall the biologist be allowed to handle active nest or its eggs. The survey shall cover all reasonably potential nesting locations on and within 500 feet of the project site, including ground nesting species, such as western meadowlark, nests in shrubs that could support nests, and suitable raptor nest sites such as nearby trees and power poles. Access shall be granted on private offsite properties prior to conducting surveys on private land. If access is not obtainable, the biologist shall survey these areas from the nearest vantage point with use of spotting scopes or binoculars.</li> </ul>	
		b. If construction is scheduled to occur during the non-nesting season (September 1–February 1), no preconstruction surveys or additional measures are required for non-listed avian species.	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		c. If construction begins in the non-nesting season and proceeds continuously into the nesting season, no surveys are required for non-listed avian species so long as all suitable nesting sites have been cleared from active construction/decommissioning areas.	
		d. If active nests are found, a 100-foot no-disturbance buffer shall be created around non-listed avian species' nests unless adjusted by the qualified biologist based on the needs and sensitivities of individual species, and a 300-foot no-disturbance buffer around raptor species' nests (or a suitable distance otherwise determined in consultation with California Department of Fish and Wildlife). Any nest of a federal- or state-listed bird species shall require consultation with the appropriate agency (U.S. Fish and Wildlife) to determine the appropriate buffer distance surrounding the nest to provide adequate nest protection. These buffers shall remain in effect until a qualified wildlife biologist has determined that the birds have fledged or the project component(s) have been redesigned to avoid the area. All no- disturbance buffers shall be delineated in the field with visible flagging or fencing material.	
		<b>MM 4.4-10:</b> During the operations and maintenance phase of the project, an Avian Mortality Monitoring Program shall be developed in coordination with the project Lead Biologist and implemented to systematically and periodically determine the extent of mortality occurring due to collisions with solar arrays. The measures listed below apply to the Avian Mortality Monitoring Program:	
		a. The Avian Mortality Monitoring Program shall be developed following the Mortality Monitoring Design for Utility-Scale Solar Power Facilities and include methods to achieve Objective 1 (monitoring to estimate total bird and bat mortality). Methods include using a trained and skilled team of authorized biologists to systematically sample the project site by walking transects through the solar arrays scanning for deceased birds.	

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

# TABLE 1-8: Summary of Impacts, Mitigation Measures, and Levels of Significance

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.4-2:</b> The project could have a substantial adverse effect on any riparian habitat or other	Potentially significant	Implementation of Mitigation Measure MM 4.7-3 would be required (see Section 4.7, <i>Geology and Soils</i> , for full mitigation measure text).	Less than significant
sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS.		<b>MM 4.4-11:</b> Prior to issuance of any grading or building permit, the project proponent/operator shall submit a report detailing how all identified ephemeral drainages are avoided and will be continually complied with during the life of the project. A copy of this report shall also be provided to the Central Valley Regional Water Quality Control Board and the Kern County. Public Works Department – Floodplain Management Division. The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:	
		a. Potential jurisdictional features (ephemeral drainages, drainage ditch, dormant channel, and upland swales) identified in the jurisdictional delineation report shall be avoided. This may be shown in plan form. A 50-foot buffer will be delineated and flagged for avoidance during project activities adjacent to potential jurisdictional features.	
		b. Any material/spoils generated from project activities shall be located away from jurisdictional areas and protected from stormwater 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. Fuel or hazardous materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and be placed generally at least 50 feet from the top of bank.	
		d. Any spillage of fuel or hazardous material will be stopped if it can be done safely. The contaminated area will be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative will be notified.	
		<b>MM 4.4-12:</b> Prior to project construction, a jurisdictional delineation report shall be prepared that describes jurisdictional	

<b>TABLE 1-8:</b>	SUMMARY OF IMPACTS, MITIGATION	<b>MEASURES, AND LEVELS OF SIGNIFICANCE</b>
-------------------	--------------------------------	---

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		resources and the extent of jurisdiction under the U.S. Army Corps of Engineers, Central Valley Regional Water Quality Control Board and California Department of Fish and Wildlife.	
		If it is determined by the jurisdictional delineation report, that all jurisdictional features are avoided no further action is required. If it is determined during final siting that jurisdictional resources cannot be avoided, the project applicant shall be subject to provisions (1–3) as identified below:	
		a. The project proponent/operator shall complete a Report of Waste Discharge with the Central Valley Regional Water Quality Control Board to obtain Waste Discharge Requirements and shall also consult with California Department of Fish and Wildlife on the need for a streambed alteration agreement. Copies of the final report shall be submitted to the County.	
		b. Based on consultation with Central Valley Regional Water Quality Control Board and California Department of Fish and Wildlife, 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 Central Valley Regional Water Quality Control Board or California Department of Fish and Wildlife 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 Central Valley Regional Water Quality Control Board and/or California Department of Fish and Wildlife, shall be provided to the County.	
		e. A Habitat Mitigation and Monitoring Plan shall be prepared that outlines the compensatory mitigation in coordination with the	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		Central Valley Regional Water Quality Control Board and California Department of Fish and Wildlife.	
		<ul> <li>i. If onsite mitigation is proposed, the Habitat Mitigation and Monitoring Plan 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).</li> </ul>	
		ii. The Habitat Mitigation and Monitoring Plan 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 Habitat Mitigation and Monitoring Plan 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 Central Valley Regional Water Quality Control Board and California Department of Fish and Wildlife shall be provided to the Kern County Planning and Natural Resource Department.	
<b>Impact 4.4-3:</b> 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.	No impact	No mitigation would be required.	No impact

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.4-4: The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Potentially significant	Implementation of Mitigation Measure MM 4.1-4 would also be required (see Section 4.1, <i>Aesthetics</i> , for full text of Mitigation Measure MM 4.1-4). <b>MM 4.4-13:</b> The project site shall be fenced to keep terrestrial wildlife species from entering the project site during construction, but will provide openings post-construction to enable wildlife to move freely through the project site during operation (e.g., create 4- to 7-inch portals or openings in the fence raising the fence 7 inches above the ground and knuckling the bottom of the fence [i.e., wrapping the fencing material back to form a smooth edge] to protect wildlife passing underneath). This fencing shall be constructed of slit fence material, metal flashing, plastic sheeting, or other materials that will prohibit wildlife from climbing the fence or burrowing below the fence. The fencing shall be installed prior to issuance of grading or building permits and shall be maintained during all phases of construction and decommissioning. The fencing shall be inspected by a qualified biologist at a regular interval and immediately after all major rainfall events through the duration of construction and decommissioning activities. Any needed repairs to the fence shall be performed on the day of their discovery. Outside temporarily fenced exclusion areas, the project operator shall limit the areas of disturbance. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. These areas shall be flagged and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.	Less than significant
<b>Impact 4.4-5:</b> The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Potentially significant	Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 and MM 4.1-4 would be required (see Section 4.1, <i>Aesthetics</i> , for full mitigation measure text).	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.4-6:</b> The project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.	No impact	No mitigation would be required.	No impact
Impact 4.4: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 as well as MM 4.1-4, MM 4.1-5, MM 4.3-1, MM 4.3-2, MM 4.3-6, MM 4.7-3, and MM 4.9-3 would be required (see Sections 4.1, <i>Aesthetics</i> ; 4.3, <i>Air Quality</i> ; 4.7, <i>Geology and Soils</i> ; and 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation measure text).	Significant and unavoidable
4.5 Cultural Resources			
<b>Impact 4.5-1:</b> The project would cause a substantial adverse change in the significance of a historical resource, as defined in <i>CEQA</i> <i>Guidelines</i> Section 15064.5.	Potentially significant	<ul> <li>MM 4.5-1: The project proponent/operator shall retain a Lead Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior, 2011), to carry out all mitigation measures related to archaeological and unique historical resources. The contact information for this Lead Archaeologist shall be provided to the Kern County Planning and Natural Resources Department prior to the commencement of any construction activities onsite. Further, the Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project:</li> <li>a. Prior to commencement of any ground disturbing activities, the Lead Archaeologist in consultation with the Native American monitor(s) shall conduct a Cultural Resources Sensitivity Training for all personnel working on the 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 provided to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form.</li> </ul>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		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.	
		The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Lead Archaeologist and/or Native American monitor(s) for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.	
		b. The project proponent/operator shall ensure all employees or onsite workers who have not participated in earlier Cultural Resources Sensitivity Trainings shall meet the provisions specified above.	
		c. A copy of the Cultural Resources Sensitivity Training Guide/Materials shall be kept on-site and available for all personnel to review and be familiar with as necessary. It is the responsibility of the Lead Archaeologist to ensure all employees receive appropriate training before the work on-site.	
		<b>MM 4.5-2:</b> 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. Provide an overview of best management practices to be utilized during construction activities to ensure protection of cultural resources.	
		b. Outline the process for evaluation of any unanticipated cultural discoveries during project construction activities.	
		<b>MM 4.5-3:</b> During implementation of the project, the services of Native American Tribal Monitors working under the supervision of the Lead Archaeologist and identified through consultation with appropriate Native American tribes, shall be retained by the project proponent/operator to monitor, on a full-time basis, ground-	

Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
	disturbing activities associated with project-related construction activities, as follows:	
	a. All initial excavation and ground-disturbing activities within the project area, shall be monitored by archaeological and Native American monitors.	
	b. The Lead Archaeologist, archaeological monitors, and Native American monitors shall be provided all project documentation related to cultural resources within the project site prior to commencement of ground disturbance activities. Project documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the Lead Archaeologist, archaeological monitor, and Native American monitor.	
	c. The archaeological monitor(s) shall keep daily logs and the Lead Archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the Lead Archaeologist shall prepare a monitoring report detailing the results of monitoring, which shall be submitted to the Kern County Planning and Natural Resources Department and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.	
	<b>MM 4.5-4:</b> 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 Native American monitor. The Lead Archaeologist, in consultation with the Native	
	Level of Significance before Mitigation	Level of Significance before Mitigation         Mitigation Measures           disturbing activities associated with project-related construction activities, as follows:         a. All initial excavation and ground-disturbing activities within the project area, shall be monitored by archaeological and Native American monitors.           b. The Lead Archaeologist, archaeological monitors, and Native American monitors shall be provided all project documentation related to cultural resources within the project site prior to commencement of ground disturbance activities. Project documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the Lead Archaeologist, archaeological monitor, and Native American monitor.           c. The archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the Lead Archaeologist shall prepare a monitoring report detailing the results of monitoring, which shall be submitted to the Kern County Planning and Natural Resources Department and to the southerm 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 Arc

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		and recommend appropriate treatment measures. If further treatment of the discovery is necessary, the Environmentally Sensitive Area shall remain in place until all work is completed. Per California Environmental Quality Act Guidelines Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources.	
		Consistent with California Environmental Quality Act Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist in consultation with the Native American monitor shall develop additional treatment measures in consultation with the County, which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Diagnostic archaeological materials with research potential recovered during any investigation shall be curated at an accredited curation facility. The Lead Archaeologist, in consultation with a designated Native American monitor, shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.	
<b>Impact 4.5-2:</b> The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to <i>CEQA Guidelines</i> Section 15064.5.	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required.	Less than significant

 TABLE 1-8:
 SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact 4.5-3: The project would disturb human remains, including those interred outside of formal cemeteries.	Potentially significant	<b>MM 4.5-5:</b> If human remains are uncovered during project construction, the project contractor shall immediately halt work within 100 feet of the find, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5(e)(1) of the California Environmental Quality Act Guidelines. 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(c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et seq.) directing identification of the next-of-kin will apply.	Less than significant
Impact 4.5: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5 would be required.	Less than significant
4.6 Energy			
<b>Impact 4.6-1:</b> 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 Measures MM 4.3-5 and MM 4.3-7, would be required (see Section 4.3, <i>Air Quality</i> , of this EIR, for full mitigation measure text).	Less than significant

<b>TABLE 1-8:</b>	SUMMARY OF IMPACTS, MITIGATION	MEASURES, AND LEVELS OF SIGNIFICANCE
-------------------	--------------------------------	--------------------------------------

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.6-2:</b> 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 Measures MM 4.3-5 and MM 4.3-7 would be required (see Section 4.3, <i>Air Quality</i> , of this EIR, for full mitigation measure text).	Less than significant
4.7 Geology and Soils			
<b>Impact 4.7-1:</b> 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
<b>Impact 4.7-2:</b> 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	<ul> <li>MM 4.7-1: Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a full geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it to the Kern County Public Works Department for review and approval.</li> <li>a. The geotechnical study must be signed by a California-registered and licensed professional geotechnical engineer or engineering geologist and must include, but not be limited to, the following: <ol> <li>Location of fault traces and potential for surface rupture and ground shaking potential;</li> <li>Maximum considered earthquake and associated ground acceleration for design;</li> </ol> </li> </ul>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		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.	
		c. 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 or mitigated.	
		<ul> <li>MM 4.7-2: Prior to the issuance of grading permits, the project proponent shall retain a California registered and licensed geotechnical engineer to design the project facilities to withstand probable seismically induced ground shaking at the site. All grading and construction on site shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California-registered professional engineer.</li> <li>a. The procedures and site conditions shall encompass site preparation, foundation specifications, and protection measures</li> </ul>	
		<ul><li>for buried metal.</li><li>b. The final structural design shall be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements shall be provided to the</li></ul>	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		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.	
<b>Impact 4.7-3:</b> 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
<b>Impact 4.7-4:</b> The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: landslides.	No impact	No mitigation would be required.	No impact
<b>Impact 4.7-5:</b> 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	<ul> <li>MM 4.7-3: The construction contractor shall incorporate Best Management Practices consistent with the National Pollutant Discharge Elimination System General Construction Permit Program for all construction projects that would not retain all stormwater onsite and the Kern County Grading Code. The project proponent shall prepare an Erosion and Sedimentation Control Plan as well as a Stormwater Pollution Prevention Plan. The Stormwater Pollution Prevention Plan shall be prepared by a Qualified Stormwater Pollution Prevention Plan Developer and submitted for review and approval by the applicable Regional Water Quality Control Board. The Stormwater Pollution Prevention Plan Best Management Practices shall include, but not be limited to, the following:</li> <li>Scheduling to avoid ground disturbance during rain events to the maximum extent possible</li> <li>Preservation of existing vegetation and topography to the maximum extent practicable</li> <li>Stabilized construction entrances and exits</li> </ul>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
Impact	beiore witigation	<ul> <li>Erosion control (including all pertinent temporary erosion control practices as specified in Chapter 17.28.140 of the Kern County Grading Code), such as mulching, temporary drains and cullies, sandbag barrier, geotextiles and mats, silt fences, brush or rock filters, earth dikes, straw bale barriers, and sediment traps</li> <li>Sadiment control</li> </ul>	
		Waste management	
		Good housekeeping	
		Post-construction site stabilization	
		• Prior to initial construction mobilization, preconstruction surveys shall be performed and sediment and erosion controls shall be installed in accordance with the approved Stormwater Pollution Prevention Plan. A copy of the approved Stormwater Pollution Prevention Plan shall be submitted to the Kern County Planning and Natural Resources Department.	
		<b>MM 4.7-4:</b> The project proponent shall limit grading to the minimum area necessary for construction. Prior to the initiation of construction, the project proponent shall retain a California registered and licensed professional engineer to submit final grading earthwork and foundation plans to the Kern County Public Works for approval.	
<b>Impact 4.7-6:</b> 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	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.7-7:</b> 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
<b>Impact 4.7-8:</b> 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	<ul> <li>MM 4.7-5: The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (Society for Vertebrate Paleontology, 2010), to carry out all mitigation measures related to paleontological resources. The qualified paleontologist and the Lead Archeologist may be the same individual:</li> <li>a. Prior to the start of any ground disturbing activities, the qualified paleontologist shall prepare a Paleontological Resources Awareness Training program for all construction personnel working on the project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training Guide may be presented in video form.</li> <li>b. Paleontological Resources Awareness Training may be conducted in conjunction with the archaeological resources training required by Mitigation Measure MM 4.5-1 presented in Section 4.5, Cultural Resources.</li> <li>c. The training shall include an overview of potential paleontological resources that could be encountered during ground disturbing activities to facilitate worker recognition,</li> </ul>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		avoidance, and subsequent immediate notification to the qualified paleontologist for further evaluation and action, as appropriate; and penalties for unauthorized fossil collecting or intentional disturbance of paleontological resources.	
		d. The project operator shall ensure all new on-site construction personnel who have not participated in earlier Paleontological Resources Awareness 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.	
		<b>MM 4.7-6:</b> During construction the qualified paleontologist or designated monitor shall monitor all ground-disturbing activity (with the exception of vibratory or hydraulic installation of tracking or mounting structures and foundations or supports) that occurs at a depth of 5 feet or deeper below ground surface:	
		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 monitoring, the paleontologist shall prepare a report documenting the absence or discovery of	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		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.	
		<b>MM 4.7-7:</b> If a paleontological resource is found, the project contractor shall cease ground-disturbing activities within 50 feet of the find. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials. Accompanying notes, maps, and photographs shall also be filed at the repository.	
Impact 4.7: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.7-1 through MM 4.7-7 would be required.	Less than significant
4.8 Greenhouse Gas Emissions			
<b>Impact 4.8-1:</b> 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
<b>Impact 4.8-2:</b> 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

|--|

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.9 Hazards and Hazardous Mater	ials		
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, <i>Utilities and System Services</i> , for full mitigation measure text).	Less than significant
		<b>MM 4.9-1:</b> During the life of the project, including decommissioning, the project operator shall prepare and maintain a Hazardous Materials Business Plan, as applicable, pursuant to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern County Ordinance Code 8.04.030, by submitting all the required information to the California Environmental Reporting System at http://cers.calepa.ca.gov/ for review and acceptance by the Kern County Environmental Health Services Department/Hazardous Materials Section. The Hazardous Materials Business Plan shall:	
		• Delineate hazardous material and hazardous waste storage areas	
		• Describe proper handling, storage, transport, and disposal techniques	
		• Describe methods to be used to avoid spills and minimize impacts in the event of a spill	
		• Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction and operation	
		• Establish public and agency notification procedures for spills and other emergencies including fires	
		• Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site	
		The project proponent shall ensure that all contractors working on the project are familiar with the facility's Hazardous Materials Business Plan as well as ensure that one copy is available at the project site at all times. In addition, a copy of the accepted Hazardous Materials Business Plan from California Environmental Reporting System shall be submitted to the Kern County Planning and Natural Resources Department for inclusion in the projects permanent record.	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.9-2:</b> 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.	Level of Significance before Mitigation Potentially significant	Mitigation Measures Implementation of Mitigation Measures MM 4.9-1, as provided above, and MM 4.17-1 would be required (see Section 4.17, <i>Utilities and System Services</i> , for full mitigation measure text). MM 4.9-2: Prior to permit approval, the project proponent/operator shall hire a qualified consultant to conduct well testing to verify that no harmful substances, such as gas or oil, are leaking from the existing plugged wells onsite. Prior to testing, the qualified consultant will prepare a work plan detailing the actions needed to complete the testing and steps required if harmful substances are encountered. The work plan will be submitted to the California Geologic Energy Management Division and the Kern County Department of Planning and Natural Resources for review and approval. The testing program shall be consistent with the California Geologic Energy Management	Level of Significance after Mitigation Less than significant
		Division's Requirements for Idle Well Testing and Management, California Code of Regulations, Title 14, Division 2, Chapter 4, Subchapter 1, Article 3. Once the work is approved testing can commence within the parameters identified in the work plan. Any wells that do not meet the aforementioned testing requirements shall be resealed and properly plugged consistent with California Geologic Energy Management Division requirements. However, if there is evidence of contaminants found during testing, the qualified consultant shall prepare a report detailing the results of the testing and a work action plan to remediate any contamination found and to plug the wells. The completed report and work action plan will be submitted to California Geologic Energy Management Division and the Kern County Department of Planning and Natural Resources for comment and review.	
		<ul> <li>MM 4.9-3: The project proponent/operator shall continuously comply with the following:</li> <li>a. The construction contractor or project personnel shall use herbicides that are approved by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service for use in California and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use). Personnel applying herbicides shall have all appropriate State and local herbicide</li> </ul>	

<b>TABLE 1-8:</b>	SUMMARY OF IMPACTS, MITIGATION	<b>MEASURES, AND LEVELS OF SIGNIFICANCE</b>
-------------------	--------------------------------	---

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		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.	
<b>Impact 4.9-3:</b> 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.	No impact	No mitigation would be required.	No impact
<b>Impact 4.9-4:</b> 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.	No impact	No mitigation would be required.	No impact

TABLE 1-8:	SUMMARY OF IMPACTS, MITIGA	ATION MEASURES, AND LEVELS	<b>5 OF SIGNIFICANCE</b>
------------	----------------------------	----------------------------	--------------------------
Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
--	--	---	---
<b>Impact 4.9-5:</b> 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
<b>Impact 4.9-6:</b> The project would impair implementation of, or physically interfere with, an adopted	Potentially significant	Implementation of Mitigation Measure MM 4.15-1 would be required (see Section 4.15, <i>Transportation</i> , for full mitigation measure text).	Less than significant
emergency response plan or emergency evacuation plan.		<b>MM 4.9-4:</b> Prior to issuance of building permits, the project proponent shall provide proof that the encumbrance to Section 14, Township 20 North, Range 19 West, caused by license, recorded September 11, 1940, in Book 954 of Official Records page 354 Kern County Records, has been removed.	
<b>Impact 4.9-7:</b> 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, <i>Pubic Services</i> , for full mitigation measure text).	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.9-8:</b> 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:	Less than significant	No mitigation would be required.	Less than significant
i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; or			
<li>ii. Are associated with design, layout, and management of project operations; or</li>			
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.			
Impact 4.9: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.9-4, MM 4.15-1, and MM 4.17-1 would be required (see Sections 4.9, <i>Hazards and Hazardous Materials</i> ; 4.15, <i>Transportation</i> ; and 4.17, <i>Utilities and System Services</i> , respectively, for full mitigation measure text).	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.10 Hydrology and Water Quality	7		
<b>mpact 4.10-1:</b> The project would iolate water quality standards or vaste discharge requirements, or therwise degrade surface or groundwater water quality.	<ul> <li>Implementation of Mitigation Measures MM 4.7-3 and MM 4.9-1 would be required (see Sections 4.7, <i>Geology and Soils</i>, and 4.9, <i>Hazards and Hazardous Materials</i>, for full mitigation measure text).</li> <li>MM 4.10-1: 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:</li> </ul>	Less than significant	
		a. Numerical stormwater model for the project site (with solar posts and without), and would evaluate existing and proposed (with project) drainage conditions during a 100-year storm 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. The drainage plan would include engineering recommendations to be incorporated into the project design and applied within the site boundary. Engineering recommendations will include measures to offset increases in stormwater runoff that would result from the project, as well as implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding onsite or offsite.	
		d. The final design of the solar arrays shall include 1 foot of freeboard clearance above the calculated maximum flood depths (for a 100-year event) for the solar arrays or the finished floor of any permanent structures. Solar panel sites located within a 100-year floodplain shall be installed on piers so that the panels are located 1 foot above the calculated maximum flood depths or graded to direct potential flood waters without increasing the	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		water surface elevations more than 1 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.	
<b>Impact 4.10-2:</b> The project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Less than significant	No mitigation would be required.	Less than significant
<b>Impact 4.10-3:</b> 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 4.7-3 and MM 4.10-1 would be required (see Section 4.7, <i>Geology and Soils</i> , for full mitigation measure text).	Less than significant
<b>Impact 4.10-4:</b> 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 4.10-1 would be required.	Less than significant

<b>TABLE 1-8:</b>	SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE
-------------------	---

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.10-5:</b> 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 4.10-1 would be required.	Less than significant
<b>Impact 4.10-6:</b> The project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.	Potentially significant	Implementation of Mitigation Measure MM 4.10-1 would be required.	Less than significant
<b>Impact 4.10-7:</b> The project would result in a flood hazard, tsunami, or seiche zone, that would risk release of pollutants due to project inundation.	Less than significant	No mitigation would be required.	Less than significant
<b>Impact 4.10-8:</b> 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
Impact 4.10: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.7-3, MM 4.9-1, and MM 4.10-1 would be required (see Sections 4.7, <i>Geology and Soils</i> , and 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation measure text).	Less than significant
4.11 Land Use			
<b>Impact 4.11-1:</b> 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	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.11-2:</b> 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	<b>MM 4.11-1:</b> Prior to issuance of any building permit, the project proponent shall provide a Decommission Plan for review and approval by the Kern County Engineering, Surveying, and Permit Services Department. The Decommission Plan would be carried out by the proponent or a County-contracted consulting firm(s) at a cost to be borne by the project proponent. 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. The repurposing, resale and salvage value of all personal property, including the solar panels and support structures, and real property interests, if any, held by the project proponent on the date of original valuation and as adjusted annually by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s), as described below, 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 decommission Plan, the project operator shall post or establish and maintain financial assurances with Kern County related to the deconstruction of the site as identified in 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.	Less than significant

Lund Impact	evel of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		b. A surety bond;	
		c. A trust fund in accordance with the approved financial assurances to guarantee the deconstruction work will be completed in accordance with the approved decommission plan; or	
		d. Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department.	
		The financial institution or Surety Company shall give the County at least 30 days' notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed every five years by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate that adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommission Plan. Should the project operator deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance.	
		Once deconstruction has occurred, financial assurance will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommission of the site by the County shall be returned to the project operator.	
		Should the solar field not be in operational condition for a consecutive period of 24 months due to reasons within the sole and reasonable control of the project owner, the site shall be deemed abandoned and shall be removed within 60 days from the date a written notice is sent to the property owner and solar field owner, as well as the project operator, by the County. Within this 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 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	

 TABLE 1-8:
 SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		has been deemed abandoned after notice to the owner and a written determination by the Kern County Planning and Natural Resources Director be permitted to remain in place for more than 48 months from the date, the solar facility was first deemed abandoned by written determination by the Kern County Planning and Natural Resources Director.	
4.12 Mineral Resources			
<b>Impact 4.12-1:</b> 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
<b>Impact 4.12-2:</b> The project would result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.	Less than significant	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
4.13 Noise			
<b>Impact 4.13-1:</b> 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	<ul> <li>MM 4.13-1: The following measures are to be implemented to further reduce short-term noise levels associated with project construction and decommissioning:</li> <li>a. 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.</li> <li>b. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9 p.m. to 6 a.m. on weekdays, and between 9 p.m. to 8 a.m. on weekends. These</li> </ul>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		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.	
		c. 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).	
		d. Onsite vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency).	
<ul> <li>less (except in cases of emergency).</li> <li>e. Back-up beepers for all construction equipmen shall be broadband sound alarms or adjusted to th levels possible, provided that the Occupation Health Administration and California Division o Safety and Health's safety requirements are no vehicles where back-up beepers are not availal safety measures such as escorts and spotters shall safety measures such as escorts and spotters shall MM 4.13-2: The construction contractor shall esta Disturbance Coordinator for the project during co decommissioning. The Noise Disturbance Coordin responsible for responding to any complaints abou noise. The Noise Disturbance Coordinator shall deter of the complaint and shall be required to implem measures to resolve the complaint. Contact inforn Noise Disturbance Coordinator shall be submitter County Planning and Natural Resources Depart</li> </ul>		<ul> <li>e. 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.</li> <li>MM 4.13-2: The construction contractor shall establish a Noise Disturbance Coordinator for the project during construction and decommissioning. The Noise Disturbance Coordinator shall be responsible for responding to any complaints about construction noise. The Noise Disturbance Coordinator shall determine the cause of the complaint and shall be required to implement reasonable measures to resolve the complaint. Contact information for the Noise Disturbance Coordinator shall be submitted to the Kern County Planning and Natural Resources Department prior to commencement of any ground disturbing activities.</li> </ul>	
		<b>MM 4.13-3:</b> Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.) including decommissioning, the project proponent/operator shall provide written notice to the public through mailing a notice, which shall include:	
		a. The mailing notice shall be mailed to all residences within 1,000 feet of the project site, 15 days or less prior to	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		construction activities. The notices shall include the construction schedule and a telephone number and email address where complaints and questions can be registered with the noise disturbance coordinator.	
		b. A minimum of one sign, legible at a distance of 50 feet, shall be posted at the construction site, or adjacent to the nearest public access to the main construction entrance, throughout construction activities that shall provide the construction schedule (updated as needed) and a telephone number where noise complaints can be registered with the noise disturbance coordinator.	
		c. Documentation that the public notice has been sent and the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department.	
		d. Prior to commencing decommissioning, the project owner shall follow the mailing, signage, and documentation requirements in MM 4.13-3 above.	
<b>Impact 4.13-2:</b> The project would generate excessive groundborne vibration or groundborne noise levels.	Less than significant	No mitigation would be required.	Less than significant
<b>Impact 4.13-3:</b> 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
<b>Impact 4.13-4:</b> 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

<b>TABLE 1-8:</b>	SUMMARY OF IMPACTS, MITIGATION	MEASURES, AND LEVELS OF SIGNIFICANCE
-------------------	--------------------------------	--------------------------------------

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.14 Public Services	-		
<b>Impact 4.14-1:</b> The project would result in the need for new or physically altered governmental	Potentially significant	Implementation of Mitigation Measure MM 4.9-4 would be required (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation measure text).	Less than significant
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.		<b>MM 4.14-1:</b> 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	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		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.	
		<b>MM 4.14-2:</b> The project proponent/operator shall implement the following mitigation steps at the project site:	
		a. For facility operation, the project proponent/operator shall pay for impacts on countywide public protection, sheriff's patrol and investigative services, and fire services at a rate of \$29.59 per 1,000 square feet of panel-covered ground for the facility operation and related onsite structures for the entire covered area of the project. The total amount shall be divided by 20 and paid on a yearly basis. Any operation that continues past 20 years will pay the same yearly fee. If completed in phases, the annual amount shall be based on the square footage of ground covered by April 30 of each year. The amount shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year for each and every year of operation. Alternatively, the project proponent/operator may choose to pay the total amount, based on 20 years of operation, as a one-time lump sum rather than ongoing annual payments. Copies of payments made shall be submitted to the Kern County Planning and Natural Resources Department.	
		b. Written verification of ownership of the project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company with assessed taxes that total less than \$1,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of \$1,000 per megawatt. The amount shall be paid for all years of operation occurring after the date of the transfer. The fee shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year.	
		c. The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but	

	Level of Significance		Level of Significance
Impact	before Mitigation	Mitigation Measures	after Mitigation
		is not necessarily limited to, the project proponent/operator obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization, using this address for acquisition, purchasing and billing purposes associated with the project. As an alternative to the aforementioned process, the project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes.	
		d. Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.	
Impact 4.14: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.9-4, MM 4.14-1, and MM 4.14-2 would be required (see Section 4.9, <i>Hazards and Hazardous Materials</i> , for full mitigation measure text).	Less than significant

 TABLE 1-8:
 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			
<b>Impact 4.15-1:</b> 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	No mitigation would be required.	Less than significant
<b>Impact 4.15-2:</b> 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
<b>Impact 4.15-3:</b> 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	<ul> <li>MM 4.15-1: Prior to the issuance of construction or building permits, the project proponent/operator shall:</li> <li>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 6, 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 address, at a minimum, the following issues:</li> <li>1. Timing of deliveries of heavy equipment and building materials;</li> <li>2. Directing construction traffic with a flag person;</li> <li>3. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;</li> <li>4. Ensuring access for emergency vehicles to the project sites;</li> </ul>	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		5. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;	
		6. Maintaining access to adjacent property; and,	
		7. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hours.	
		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 the California Department of Transportation.	
		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 county and non-county maintained roads that demonstrably 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 project	

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
		responsibility for the damage and the extent of remediation required, if any.	
<b>Impact 4.15-4:</b> The project would result in inadequate emergency access.	Potentially significant	Implementation of Mitigation Measure MM 4.15-1 would be required.	Less than significant
Impact 4.15: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measure MM 4.15-1 would be required.	Less than significant
4.16 Tribal Cultural Resources			
<b>Impact 4.16-1a:</b> The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required (see Section 4.5, <i>Cultural Resources</i> , for full mitigation measure text).	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.16-1b:</b> 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.	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required (see Section 4.5, <i>Cultural Resources</i> , for full mitigation measure text).	Less than significant
Impact 4.16: Cumulative Impacts	Potentially significant	Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required (see Section 4.5, <i>Cultural Resources</i> , for full mitigation measure text).	Less than significant

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.17 Utilities and Service Systems			
<b>Impact 4.17-1:</b> 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 4.7-3 and MM 4.10-1 would be required (see Sections 4.7, <i>Geology and Soils</i> , and 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text).	Less than significant
<b>Impact 4.17-2:</b> 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
<b>Impact 4.17-3:</b> 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

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
<b>Impact 4.17-4:</b> 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	<ul> <li>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:</li> <li>a. A Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Construction, Operation and Maintenance, and Decommissioning, Trash Abatement and Pest Management Program.</li> <li>b. The Recycling Coordinator shall facilitate recycling of all construction waste through coordination with contractors, local waste haulers, and/or other facilities that recycle</li> </ul>	Less than significant
		<ul> <li>construction/demolition wastes.</li> <li>c. The Recycling Coordinator shall also be responsible for ensuring wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal.</li> <li>d. Contact information of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits.</li> </ul>	
		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 and decommissioning. A site plan showing the recycling storage area for construction shall be submitted prior to the issuance of any grading or building permit for the site.	
<b>Impact 4.17-5:</b> 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 Measure MM 4.7-3, MM 4.10-1, and MM 4.17-1 would be required (see Sections 4.7, <i>Geology and Soils</i> , and 4.10, <i>Hydrology and Water Quality</i> , for full mitigation measure text).	Less than significant

TABLE 1-8: SUMMARY OF IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICAN
--

Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.18 Wildfire			
<b>Impact 4.18-1:</b> 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
<b>Impact 4.18-2:</b> The project would, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	Potentially significant	Implementation of Mitigation Measure MM 4.14-1 would be required (see Section 4.14, <i>Public Services</i> , for full mitigation measure text).	Less than significant
<b>Impact 4.18-3:</b> 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, <i>Public Services</i> , for full mitigation measure text).	Less than significant
<b>Impact 4.18-4:</b> 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, <i>Hydrology and Water Quality</i> , 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, <i>Hydrology and Water Quality,</i> and 4.14, <i>Public Services,</i> for full mitigation measure text).	Significant and unavoidable

## TABLE 1-8: Summary of Impacts, Mitigation Measures, and Levels of Significance

# 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 Pastoria Solar Project (project).

The project is located on approximately 650 acres of privately owned land and would generate a combined 115 megawatts (MW) of renewable electrical energy and up to 80 MW of a Battery Energy Storage System (BESS) in unincorporated Kern County. The project would consist of approximately 350,000 photovoltaic (PV) panels arranged in a grid-pattern over the project site. The project would include installation of PV panels that would be mounted on steel support posts that would be pile driven into the ground and connected to inverters. The BESS along with the project substation would be located on an approximate 4.5-acre portion of the eastern project site. A 0.5-mile-long generation-tie line (gen-tie) is proposed to electrically interconnect the project to the regional grid system. The gen-tie would run east from the project site to the existing Pastoria Energy Facility (PEF) switchyard from which power would be conveyed through existing conductors to Southern California Edison's (SCE's) Pastoria 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 decisionmakers 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 projectlevel 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 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 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 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 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 Kern County and the Commission, 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, in this case Kern County and the Commission, 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:

- Initial Study/Notice of Preparation (IS/NOP). Kern County prepared and circulated a IS/NOP for 30 days to responsible, trustee, and local agencies for review and comment beginning on September 12, 2019 and ending on October 14, 2019.
- **Draft EIR Preparation/Notice of Completion (NOC).** A Draft EIR is prepared, incorporating public and agency responses to the IS/NOP 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 *CEQA Guidelines* Section 15105, 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 Initial Study/Notice of Preparation

Pursuant to *CEQA Guidelines* Section 15082, as amended, the Kern County Planning and Natural Resources Department circulated an IS/NOP to the State Clearinghouse, public agencies, special districts, and members of the public for a public review period beginning September 12, 2019, and ending on October 14, 2019. The IS/NOP 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 IS/NOP 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 IS/NOP and all comment letters are provided in Appendix A of this EIR.

# 2.4.2 Scoping Meeting

Pursuant to *CEQA Guidelines* Section 15082(c)(1), 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.

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

No verbal comments were received at the October 4, 2019, scoping meeting. Specific environmental concerns raised in written comments received during the IS/NOP public review period are discussed below. The IS/NOP and all comments received are included in Appendix A.

## **NOP Written Comments**

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

Commenter/Date	Summary of Comment
State Agencies	
Native American Heritage Commission (NAHC) September 24, 2019	The commenter states that the project should comply with Senate Bill (SB) 18 and Assembly Bill (AB) 52, contact CA Native American Tribes and their representatives that are within the geographic area of the project and conduct consultations in accordance with SB 18 and AB 52, evaluate if the project will have an adverse impact on historical resources within the project area, contact appropriate regional archaeological information center for a record search, prepare an archaeological inventory survey (if required), contact the Native American Heritage Commission, and include mitigation measures for inadvertent discoveries of archaeological resources.
California Department of Conservation, Division of Land Resources Protection September 24, 2019	The commenter states that the conversion of agricultural land represents a permanent reduction and significant impact to California's agricultural land resources. Additionally, the commenter states, under CEQA the lead agency should not approve a project if there are feasible alternatives or feasible mitigation measures available that would lessen the significant effects of the project. The commenter emphasizes agricultural conservation easements as an available mitigation tool, which should be considered. The commenter provided the following recommendations for discussion under the Agricultural Resources section of the Draft EIR:
	• Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the project;
	• Impacts on any current and future agricultural operations in the vicinity;
	• Incremental impacts leading to cumulative impacts on agricultural land;
	• Proposed mitigation measure for all impacted agricultural lands within the project area; and
	• Proposed contract resolutions and/or cancellation proceedings for land uses not compatible with land in an agricultural preserve and/or enrolled in a Williamson Act contract.

TABLE 2-1:         SUMMARY OF IS/NOP COMMENT	ГS
--	----

Commenter/Date	Summary of Comment
California Department of Transportation (Caltrans) September 30, 2019	The commenter states the average daily workforce during the construction of this project would temporarily be 190 with a peak workforce of 400 employees, which would generate approximately 380 daily trips and a maximum of 800 daily trips. As a result, the traffic generated would negatively impact traffic flow, and the increase would exceed any Level of Service (LOS) standard established by the County Congestion Management Plan. The commenter concludes these impacts must be evaluated in the Draft EIR and submitted to Caltrans for further review.
California Department of Conservation, Division of Oil, Gas, and Geothermal Resources October 3, 2019	<ul> <li>The commenter states Public Resources Code (PRC) §3208.1 establishes well reabandonment responsibility when a previously plugged and abandoned well will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil, gas, and geothermal wells. The commenter identifies six (6) known oil or gas wells located within the project boundary. The commenter states the Division categorically advises against building over, or in any way impeding access to oil, gas, or geothermal wells.</li> <li>Additionally, the commenter states there are no guarantees a well abandoned in compliance with current Division requirements as prescribed by law will not start leaking in the future. The commenter advises that all wells identified on the development parcel prior to, or during, development activities be tested for liquid and gas leakage, and failure to plug and reabandon the well may result in enforcement action, including an order to perform reabandonment well work. The Division further recommends</li> <li>Information regarding the above identified well(s), and any other pertinent information obtained be communicated to the appropriate county recorder for inclusion in the title information of the subject real property; and</li> <li>Any soil containing hydrocarbons be disposed of in accordance with local, state, and federal laws.</li> <li>Lastly, the commenter states that if any wells are encountered that were not included in this review, the property owner is expected to immediately notify the Division's construction</li> </ul>
	site well review engineer in the Inland district office, and file for Division review an amended site plan with well casing diagrams.
California Department of Water Resources October 14, 2019	The commenter states the Department of Water Resources (DWR) State Water Project's Division of Operations and Maintenance has review the NOP. The commenter states concern for the increased deterioration of Edmonston Pumping Plant Road (Road) due to the project's proposed use of the Road. The commenter requests the increase at the access point of the Road located approximately one-quarter mile east of the bridge over the California Aqueduct be analyzed in the Draft EIR, included in any traffic mediation plan, and mitigated. Additionally, any traffic study prepared for the project must include DWR's safety concerns regarding increased traffic volume and frequency entering and exiting the Road. Further, DWR requests a joint inspection of the Road between DWR and the Pastoria Solar Energy, LLC both prior and after the completion of the project. The commenter also requests a copy of any subsequent environmental documentation or correspondence relating to this project.
Local	
San Joaquin Valley Air Pollution Control District October 17, 2019	The commenter provides guidelines for emissions analysis, including criteria pollutants, nuisance odors, health risk screening/assessment, and ambient air quality analysis. The commenter further provides the district's rules and regulations to which the project may be subject.

## TABLE 2-1: SUMMARY OF IS/NOP COMMENTS

Commenter/Date	Summary of Comment	
County of Kern Public Works Department	n The commenter states that the County of Kern Department of Public Works has review the Traffic Impact Study (TIS) by Pastoria Solar Energy Company, LLC dated July 201 and provided the following comments:	
October 17, 2019	• Request to submit a signed and stamped TIS;	
	• Requests coordination of construction traffic to avoid conflicts with other neighboring projects;	
	Requests Traffic Control Plan be provided;	
	• Requests project proponent enter into a secured agreement with Kern County Public Works Department to ensure road that are demonstrably damaged by project-related activities are promptly repaired;	
	• Requests encroachment permits be obtained for any proposed work within County right- of-way;	
	• Requests all necessary transportation permits be obtained for any overweight or oversized loads;	
	• Request California Department of Transportation be contacted regarding the project; and	
	• Advises applicant will need to ensure they have necessary access from property owners for project traffic utilizing non-County maintained roadways	
<b>Interested Parties</b>		
Adams Broadwell Joseph & Cardozo, on behalf of California Unions for Reliable Energy September 16, 2019	The commenter request mailed notice of all hearings and/or actions related to the project.	

 TABLE 2-1:
 SUMMARY OF IS/NOP COMMENTS

## 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 *CEQA Guidelines* Section 15087. 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** Frazier Park Branch 3732 Park Drive Frazier Park, CA 93501

## 2.5 Format and Content

This EIR addresses the potential environmental effects of the project and was prepared following input from the public and responsible and affected agencies, and through the EIR scoping process, as discussed previously. The contents of this EIR were based on the findings in the 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 address 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;

- Hydrology and Water Quality;
- Land Use and Planning;
- Mineral Resources;
- Noise;
- Public Services;
- Transportation;
- Tribal Cultural Resources;
- Utilities and Service Systems; and
- Hazards and Hazardous Materials;
- Wildfires.

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

- Population and Housing;
- Recreation.

The IS/NOP determined that the project would not include any permanent employees as the operations and maintenance buildings would be remotely operated. Maintenance personnel would be expected to visit the project site several times per year for routine maintenance, but they would likely be drawn from the local labor force and would commute from their permanent residences to the project site during those times. However, even if the maintenance employees were hired from out of the area and had to relocate to eastern Kern County, it is expected that accommodations would be available in the nearby hotels in Wheeler Ridge, Lebec, Bakersfield, 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 additional impacts would need to be addressed. No further discussion of this topic is warranted. For a complete analysis of these impacts, please refer to Appendix A of this EIR.

## 2.5.1 Required EIR Content and Organization

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

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

<b>TABLE 2-2:</b>	<b>REQUIRED EIR CONTENTS</b>
I ADLE 4-4.	<b>REQUIRED EIN CONTENTS</b>

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 decisionmaking process, organization of the EIR, and a responsible and trustee agency list.
- Chapter 3, *Project Description*, provides a description of the location, characteristics, and objectives of the projects, and the relationship of the projects to other plans and policies associated with the project.

- Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, contains a detailed environmental analysis of the existing conditions, projects impacts, mitigation measures, and cumulative impacts.
- Chapter 5, *Consequences of Project Implementation*, presents an analysis of the project's cumulative and growth-inducing impacts and other CEQA requirements, including significant and unavoidable impacts and irreversible commitment of resources.
- Chapter 6, *Alternatives*, describes a reasonable range of alternatives to the projects that could reduce the significant environmental effects that cannot be avoided.
- Chapter 7, *Responses to Comments*, is reserved for responses to comments on the Draft EIR.
- Chapter 8, *Organizations and Persons Consulted*, lists the organizations and persons contacted during preparation of this EIR.
- Chapter 9, *List of Preparers*, identifies persons involved in the preparation of the EIR.
- Chapter 10, *Bibliography*, identifies reference sources for the EIR.
- *Appendices* provide information and technical studies that support the environmental analysis contained within the EIR.

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

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

# 2.6 Responsible and Trustee Agencies

Projects or actions undertaken by the lead agency, in this case the Kern County Planning and Natural Resources Department, may require subsequent oversight, approvals, or permits from other public agencies in order to be implemented. Other such agencies are referred to as "responsible agencies" and "trustee agencies." Pursuant to *CEQA Guidelines* Sections 15381 and 15386, 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 (USEPA)
- 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 Energy Commission (CEC)
- California Air Resources Board (CARB)
- California Public Utilities Commission (CPUC)
- California Department of Fish and Wildlife (CDFW)
- Central Valley Regional Water Quality Control Board (RWQCB)
- California Department of Transportation (Caltrans), District 9
- California Native American Heritage Commission (NAHC)

## 2.6.3 Local Agencies

- San Joaquin Valley Air Pollution Control District (SJVAPCD)
- Kern Council of Governments (KCOG)

## 2.6.4 Kern County

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

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

# 2.7 Incorporation by Reference

In accordance with *CEQA Guidelines* Section 15150 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 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.

## 2.7.3 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 20-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 COG 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.

# 2.8 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/.

This page intentionally left blank

# 3.1 Introduction

This Environmental Impact Report (EIR) has been prepared by Kern County (County), the lead agency, to identify and evaluate potential environmental impacts associated with implementation of the Pastoria Solar Project (project) proposed by Pastoria Solar Energy Company LLC (project proponent/operator) on an approximately 650-acre site in unincorporated Kern County. The project proponent proposes to construct and operate a photovoltaic (PV) solar facility and associated infrastructure necessary to generate up to 115 megawatts (MW) of renewable electric energy with the ability to store up to 80 MW in a battery energy storage system (BESS).

All project site parcels are owned by the Tejon Ranch Corporation, from whom the project proponent has site control through an option-to-lease agreement. The project consists of four parcels, bisected by an existing south-to-north agricultural haul road, herein referred to as the eastern parcels and western parcels. The eastern parcels encompass approximately 323 acres and the western parcels comprise approximately 324 acres. Each site would contain solar energy generation facilities, which together would comprise the project site.

Energy storage and interconnection facilities would be located on an approximate 4.5-acre portion of the project site inside the eastern boundary of the eastern parcels. A 0.5-mile-long generation-tie line (gen-tie) is proposed to electrically interconnect the project to the regional grid system. The gen-tie would run east from the project site to the existing Pastoria Energy Facility (PEF) switchyard from which power would be conveyed through existing conductors to Southern California Edison's (SCE's) Pastoria Substation.

# 3.2 **Project Location**

The project is located in unincorporated southern Kern County, in central California as shown in **Figure 3-1**, *Regional Vicinity*, and **Figure 3-2**, *Project Vicinity*. The nearest populated areas to the project site are the unincorporated communities of Grapevine, Wheeler Ridge, Mettler, and Lebec, which are located approximately 3 miles west, 5 miles northwest, 9 miles northwest, and 5 miles southwest of the project site, respectively. The City of Bakersfield, located approximately 25 miles to the north, is the nearest metropolitan area in relation to the project site.

Existing development in the area consists of the Pastoria Energy Facility, The Griffith Aggregate Mine, and the Department of Water Resources' Edmonston Pumping Plant. The California Aqueduct lies approximately 0.5 miles south of the project site. The project site can be reached by traveling from Interstate 5 (I-5) east along Edmonston Pumping Plant Road for approximately 4 miles then turning north onto an existing unpaved agricultural haul road, for approximately 0.7 miles.



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT






The project site is located within the United States Geological Survey USGS 7.5–minute Pastoria Creek quadrangle and is in portions of Sections 11, 12, 13, and 14 of Township 10 North, Range 19 West San Bernardino Base and Meridian. **Figure 3-3**, *Site Plan*, depicts the project's boundaries and the proposed gen-tie route. The project site is subject to the provisions of the Kern County General Plan and the Kern County Zoning Ordinance. The site is designated for agricultural resources with flood hazard constraints and is zoned Exclusive Agriculture as specified in **Table 3-1**, *Project Site and Surrounding Land Uses*. The project site consists of four total parcels and the Assessor Parcel Numbers (APNs) are summarized in **Table 3-2**, *Project Assessor Parcel Numbers (APNs) and Acreage*, below.

Project Site	Existing Land Use	Existing General Plan Designation	Existing Zoning			
	Undeveloped Open Space; Grazing Land	<ul> <li>8.1/2.5 (Intensive Agriculture Min</li> <li>20 Acres)/Flood Hazard);</li> <li>8.3/2.5 (Extensive Agriculture (Min</li> <li>20 Acres)/Flood Hazard);</li> </ul>	A (Exclusive Agriculture)			
		8.4/2.5 (Mineral and Petroleum/Flood Hazard)				
Surrounding Land Use						
North of Project Site	Undeveloped Open Space; Grazing Land; Orchard; Vineyards; Oil Pumping Facility	<ul><li>8.1/2.5 (Intensive Agriculture (Min</li><li>20 Acres)/Flood Hazard);</li><li>8.4/2.5 (Mineral and Petroleum/Flood Hazard)</li></ul>	A (Exclusive Agriculture)			
South of Project Site	Grazing Land; California Aqueduct; Edmonston Pumping Plant Road	8.3/2.5 (Extensive Agriculture (Min 20 Acres)/Flood Hazard)	A (Exclusive Agriculture)			
East of Project Site	Undeveloped Open Space; Grazing Land; a Natural Gas Powered Co-generation Facility; Griffith Aggregate Mine; Edmonston Pumping Plant; Vineyards	8.3/2.5 (Extensive Agriculture (Min 20 Acres) / Flood Hazard)	A (Exclusive Agriculture)			
West of Project Site	Undeveloped Open Space; Grazing Land	8.1/2.5 (Intensive Agriculture (Min 20 Acres)/Flood Hazard)	A (Exclusive Agriculture)			

	<b>TABLE 3-1:</b>	<b>PROJECT SITE AND SURROUNDING LAND USES</b>
--	-------------------	---

#### TABLE 3-2: PROJECT ASSESSOR PARCEL NUMBERS (APNS) AND ACREAGE

	APN	Acreage
Western Parcels	241-310-10	161.93
	241-310-15	161.52
Eastern Parcels	241-310-08	161.77
	241-310-17	162.42





# **3.3 Project Objectives**

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

The following is a list of project objectives identified by the project applicant:

- Construct and operate a large-scale solar energy generation facility with a battery energy storage system component to help California advance its RPS and energy storage goals;
- Minimize infrastructure needs and reduce potential environmental impacts by locating the facility near existing and planned infrastructure, including access to an existing substation with available transmission capacity;
- Site and design the project in a manner that minimizes potential conflicts with residential, conservation, and agricultural land uses;
- Use proven and established PV and energy storage technologies that are efficient and require low maintenance;
- Assist Kern County in promoting its role as the State's leading producer of renewable energy;
- Provide green jobs in Kern County and the State of California;
- Site and design the project in an environmentally responsible manner to avoid and/or minimize potential impacts, consistent with existing Kern County land use plans; and
- Support California's efforts to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006, which requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under SB 32, which requires that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit by 2030;
- Support California's aggressive RPS Program consistent with the timeline established by SB 100 (De León, also known as the "California Renewables Portfolio Standard Program: emissions of greenhouse gases") as approved by the California Legislature and signed by Governor Brown in September 2018, which established a 50 percent RPS goal by December 31, 2026, 60 percent by December 31, 2030, and a goal that 100 percent of electric retail sales to end-use customers be provided by renewable energy and zero-carbon resources by 2045.

# 3.4 Environmental Setting

# 3.4.1 Regional Setting

The project site is located in unincorporated southern Kern County, in central California as shown in Figure 3-1, *Regional Vicinity*, and Figure 3-2, *Project Vicinity*. The topography of the project site is relatively flat; however, the foothills at the base of the Tehachapi Mountain Range are approximately 1 mile south of the project site. Elevations in the project area range from approximately 900 feet above mean sea level (amsl) on the valley floor just north of the project site to 4,815 feet at Grapevine Peak, which is

3.65 miles southwest of the project site. Elevations across the project site range from approximately 1,169 feet at the southwest corner to 1,027 feet at the northeast corner, for a change of 142 feet over 1.41 miles (approximately 2 percent slope).

# **3.4.2** Surrounding Land Uses

Land uses in the region consist largely of agriculture with a mix of row crops and grazing land. The project site is entirely within the Tejon Ranch boundaries and is subject to the Tejon Ranch Conservation and Land Use Agreement (Ranchwide Agreement) which is discussed in more detail below. The general area to the north of the project site is primarily used for almond and pistachio farming. An oil pumping facility is located 0.17 miles from the northern border. The project site is located directly adjacent to and south of the Tejon Oil Field, which includes many active, idle, and plugged oil and gas wells. The area to the west of the project site is predominantly grazing land while the area to the east has a few vineyards. Existing infrastructure within the area includes the PEF, a natural gas-fired, combined-cycle power plant, located approximately 0.5 miles east of the project site. The California Aqueduct, which runs east–west in the vicinity of the project and extends to Department of Water Resources' Edmonston Pumping Plant, is approximately 0.7 miles south of the project site. There is also a gravel quarry operation approximately 0.8 miles to the southeast of the site, between the PEF and Edmonston Pumping Plant. The Tejon Commerce Center is located approximately 3.5 miles northwest of the project site.

The nearest populated areas to the project site are the unincorporated communities of Grapevine, Wheeler Ridge, Mettler, and Lebec, which are located approximately 3 miles west, 5 miles northwest, 9 miles northwest, and 5 miles southwest of the project site, respectively. The City of Bakersfield, located approximately 25 miles to the north, is the nearest metropolitan area in relation to the project site. Other communities within the vicinity are the City of Arvin, the unincorporated community of Weedpatch, the unincorporated community of Lamont, the unincorporated communities of Frazier Park, Pinion Pines, and Pine Mountain Club (collectively referred to as the Mountain Communities) which are located approximately 15 miles north, 18 miles north, 19 miles north, and 9.5 miles southwest of the project site, respectively. The immediate project area has few nearby residences. The nearest residence is about 2.5 miles to the northwest and there is a small cluster of homes about 2.7 miles northwest.

Table 3-1, above, presents the existing land uses, General Plan designations, and Zoning classification for the project site and surrounding area.

# 3.4.3 **Project Site Conditions**

Current use of the site is primarily for grazing; farming has not occurred on the project site within the past 10 years. The project site contains cattle feeding/watering stations. The project site is bordered immediately to the west and south by vineyards and grazing land. The eastern border is also adjacent to grazing lands that are traversed by Pastoria Creek stream channel and Cattle Creek. The northern border of the project site is adjacent to orchard and grazing land.

The project site is not designated by the California Department of Conservation (DOC) as prime Farmland, Farmland of Statewide Importance, or Unique Farmland. All four parcels are designated as grazing land by the Department of Conservation Farmland Mapping and Monitoring Program (FMMP) (DOC 2019). The project site is located within the boundary of Agricultural Preserve Number 19, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture).

Private land within locally designated agricultural preserve areas are eligible for enrollment under a Williamson Act Contract. Participation in the Williamson Act program, which is voluntary for landowners, is dependent on a County's willingness to adopt and implement the program. The rules of each agricultural preserve specify the allowed uses. Local governments may identify compatible uses that can be permitted under a use permit (DOC, 2015); which the County does by way of its Exclusive Agriculture zone. Additionally, California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Therefore, the project would be compatible with the Kern County Agriculture Preserve Number 19. As shown in **Figure 3-4**, *Williamson Act Land Use Contract Cancellation*, the project site is currently subject to an existing Williamson Act Land Use contract filed for non-renewal in 2014 and set to expire in 2023. 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; thus, a solar energy facility would not be considered a compatible use; therefore, the project would require a Williamson Act Land Use Contract Cancellation to facilitate the project.

As shown in **Figure 3-5**, *Flood Zone*, the project site is designated as Zone "A" on the Flood Insurance Rate Map (FIRM) as issued by the Federal Emergency Management Agency (FEMA), which indicates the site is in an area of flood hazard. The project site is not identified as a wetland area on the National Wetlands Inventory. There are no identified State-designated Alquist-Priolo Earthquake Fault Zones on the project site. The nearest active fault is the Pleito Fault, which is located approximately 2 miles southwest of the project site. The Garlock Fault is located approximately 6 miles southeast of the project site.

A portion of the project site is designated as a mineral recovery area by the Kern County General Plan and as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. Based on a review of records maintained by the California Department of Conservation, Geologic Energy Management Division (CalGEM) [formerly Division of Oil, Gas and Geothermal Resources (DOGGR)] six plugged oil wells were identified on the project site as shown in **Figure 3-6**, *Onsite Plugged Wells* (https://maps.conservation.ca.gov/doggr/wellfinder/#close).

Upon consultation with CalGEM, the project proponent has located the abandoned wells, tested them for leaks, and re-plugged and abandoned them to current standards. Records maintained by the Kern County Assessor indicate there is one Mineral Rights APN (241-220-10) within the boundaries of the project site.

The project is not located within an Airport Sphere of Influence, per the Kern County Airport Land Use Compatibility Plan (ALUCP). The closest public airport is the Bakersfield Municipal Airport, approximately 24 miles to the north. The closest private airport, Skydive San Joaquin Valley Airport, is located in Bakersfield approximately 12 miles to the northwest of the project site.

The project would be served by the Kern County Sherriff's Office (KCSO) for law enforcement and public safety, Kern County Fire Department (KCFD) for fire protection, and Kern County Medical Emergency Service for emergency medical and rescue services. The nearest KCSO substation that would serve the project is the Frazier Park Substation located approximately 9.6 miles southwest of the project site at 617 Monterey Trail, Suite C in the community of Frazier Park. The nearest KCFD fire station that would serve the project is Station No. 55 (Tejon), located at 5441 Dennis McCarthy Drive in the community of Lebec, approximately 4.3 miles northwest of the site. The nearest hospitals are Mercy Hospital, in the City of Bakersfield, and Kern Medical Center, in the City of Bakersfield, each approximately 26 miles to the north. The nearest school to the project is El Tejon Elementary, located approximately 5 miles south in the community of Lebec.





#### FIGURE 3-4: WILLIAMSON ACT LAND USE CONTRACT CANCELLATION









#### FIGURE 3-6: ONSITE PLUGGED WELLS

In June 2008, Tejon Ranch Company entered into a Comprehensive Conservation and Land Use Agreement (Ranchwide Agreement) with the Audubon California, the Endangered Habitats League, Natural Resources Defense Council, Planning and Conservation League, and the Sierra Club. The Ranchwide Agreement covers the entirety of Tejon Ranch, and provides for the permanent preservation of over 90 percent of Tejon Ranch (approximately 240,000 acres) through a combination of donated and acquired conservation easements, and designated open space areas within the remaining areas of Tejon Ranch. The Ranchwide Agreement also designates areas for potential future development that would not be opposed by the signatories to the Ranchwide Agreement. These areas include Tejon Mountain Village, Centennial (a project in Los Angeles County), and a 15,644-acre planning area of Grapevine, of which the Pastoria Solar project is located on 650 acres. The Ranchwide Agreement does not authorize development, nor does it create any exemptions from applicable local, state, and federal governmental environmental review or permitting processes. The Ranchwide Agreement allows the Tejon Ranchcorp to continue existing uses on Conserved Lands as follows: grazing, game management, and filming activities, which are permitted throughout Tejon Ranch; farming, sand and gravel mining, and oil and gas extraction activities, which are permitted within existing areas and defined expansion areas.

# 3.5 Land Use and Zoning

# 3.5.1 Kern County General Plan

The project site is within the jurisdictional boundaries of the Kern County General Plan, and as shown in **Figure 3-7**, *Existing General Plan & Land Use Designations*, is designated as map codes 8.1/2.5 (Intensive Agriculture (Min 20 Acres)/Flood Hazard), 8.3/2.5 (Extensive Agriculture (Min 20 Acres)/Flood Hazard), and 8.4/2.5 (Mineral and Petroleum/Flood Hazard). Existing development in the project vicinity include agricultural and grazing lands, as well as infrastructure including a natural gas powered co-generation facility, the California Aqueduct, and the Department of Water Resources Edmonston Pumping Plant. The existing land uses of the project and its surroundings are listed in Table 3-1, above.

The project includes a request for an amendment to the Circulation Element of the Kern County General Plan to eliminate future road reservations along portions of the section and mid-section lines of Sections 11, 12, 13, and 14, to allow for efficient placement of solar panels, as shown in **Figure 3-8**, *Proposed Amendments to Circulation Element*.

# 3.5.2 Kern County Zoning Ordinance

As shown in Table 3-1 above, and **Figure 3-9** *Existing Zoning*, all four parcels are currently located within the A (Exclusive Agriculture) Zone District. According to the Kern County Zoning Ordinance Section 19.12.030 G, solar energy electrical generators, when not accessory to a permitted or conditionally approved use, are permitted within the A Zone District subject to the approval of a Conditional Use Permit (CUP. The project proponent is requesting one CUP to allow for the construction and operation of 115 megawatts (MW) of photovoltaic electric generating facility with up to 80 MW of battery energy storage system (BESS) in an A District.





#### FIGURE 3-7: EXISTING GENERAL PLAN & LAND USE DESIGNATIONS





#### FIGURE 3-8: PROPOSED AMENDMENTS TO CIRCULATION ELEMENT





FIGURE 3-9: EXISTING ZONING

# 3.6 Proposed Project

The project would include the development of a PV solar facility and associated infrastructure necessary to generate up to 115 MW of renewable electrical energy with the ability to store up to 80 MW of energy on approximately 650 acres of privately owned land in the southern portion of the San Joaquin Valley, in unincorporated Kern County.

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

- Revisions
  - To change the BESS capacity from 40 MW to 80 MW

The project consists of the following requests:

- Conditional Use Permit No. 9, Map 219 (solar facility and energy storage) The project proponent is requesting one CUP to allow for the construction and operation of a PV solar facility and associated infrastructure necessary to generate 115 MW of renewable electrical energy and 80 MW energy storage capacity;
- Williamson Act Land Use Contract Cancellation 19-02 The project proponent has submitted the following petition to cancel the existing Williamson Act Land Use Contract subject to expire in 2023;
- General Plan Amendment No. 10, Map 219 (Circulation) The project is requesting to amend the Circulation Element of the Kern County General Plan to remove portions of the reservations to Section and Mid-Section Lines as described below and shown on Figure 3-8:
  - The Section line between Section 11, T10 N R19 W, and Section 12, T10 N R19 W
  - The Section line between Section 14, T10 N R19 W, and Section 13, T10 N R19 W
  - The Section line between Section 11, T10 N R19 W, and Section 14, T10 N R19 W
  - The Section line between Section 13, T10 N R19 W, and Section 12, T10 N R19 W
  - The south half of the north-south mid-section line of Section 11, T10 N R19 W
  - The east half of the east-west mid-section line of Section 11, T10 N R19 W
  - The south half of the north-south mid-section line of Section 12, T10 N R19 W
  - The west half of the east-west mid-section line of Section 12, T10 N R19 W
  - The north half of the north-south mid-section line of Section 14, T10 N R19 W
  - The east half of the east-west mid-section line of Section 14, T10 N R19 W
  - The north half of the north-south mid-section line of Section 13, T10 N R19 W
  - The west half of the east-west mid-section line of Section 13, T10 N R19 W

# 3.7 **Project Characteristics**

# 3.7.1 **Project Overview and Design**

Figure 3-2, *Project Vicinity*, shows the boundaries of the project. The project consists of two development areas that comprise the project site and would be built in several phases pending power purchase agreements. The facilities would be designed to produce up to a combined 115 MW of solar power, including storage of 80 MW in a BESS, at the point of interconnection to the existing transmission grid. The proposed facility is intended to operate year round and would generate electricity during the daylight hours.

The BESS along with the project substation would be located on an approximate 4.5-acre portion of the project site. A 0.5-mile-long gen-tie is proposed to electrically interconnect the project to the regional grid system. The gen-tie would run east from the project to the existing PEF switchyard from which power would be conveyed through existing conductors to SCE's Pastoria Substation.

The power generated on the project site would assist the state in complying with the Renewables Portfolio Standard under SB 100. Signed into law in September 2018, SB 100 requires California utilities to procure higher percentages of renewable energy sold to retail customers than previously required. The new targets are for 50 percent renewable resources by December 31, 2026, 60 percent by December 31, 2030, and a goal of 100 percent from eligible renewable energy resources and zero-carbon resources by 2045. The power generated on the project site would be sold to California investor-owned utilities, municipalities, community choice aggregators, or other purchasers in furtherance of the goals of the California Renewable Energy Portfolio Standard.

The project has an anticipated operational life of up to 35 years. At the end of the project's operational term, the project proponent would determine whether the project site should be decommissioned and deconstructed, or if it would seek an extension of its CUP. If any portion of the project site is decommissioned, it would be converted to other uses in accordance with the applicable land use regulations in effect at that time.

# **Project Components**

The combined project facilities would include the following components:

- Installation of up to 115 MW of solar PV modules, mounted on a single-axis tracking system. The mounting systems for the modules would be mounted on steel support posts that would be pile driven into the ground;
- Installation of BESS and accessories that would provide 80 MW (320 MWh) of energy storage capacity for the electrical grid;
- An onsite collector substation including circuit breakers, disconnect switches, metering protection equipment, and main step-up transformer(s);
- Installation of a 220 kilovolt (kV) gen-tie line would extend from the onsite substation due east for 0.5 miles to connect with SCE's Pastoria Substation;
- Underground or aboveground collection systems throughout the solar facilities (the collection systems would be aggregated at multiple circuit breakers or medium-voltage switchgear positions within the project facilities, leading to the collector substation);
- 34.5 kV to 220 kV step-up conversion station;

- Onsite access corridors; and
- Perimeter security fencing and nighttime directional lighting at the onsite substation.

Components for the proposed photovoltaic solar energy facility include a) power generation and collection systems, b) electric power transmission systems, c) battery energy storage systems, and d) site access and security. Those systems are described in more detail below.

### **Solar Photovoltaic Panels**

The project consists of approximately 350,000 PV panels arranged in a grid pattern over the project site. The project would include installation of PV panels that would be mounted on steel support posts that would be pile driven into the ground and connected to inverters. The PV panels would be made of a thin film material or polycrystalline silicon material covering the glass panes, which would be dark in color, highly absorptive, and have minimum reflectivity. The PV panels would be manufactured at an off-site location and transported to the project site for installation.

### **Solar Arrays**

The project would use solar panels mounted on single-axis tracking pivots that would be aligned north–south in rows evenly spaced apart, providing adequate construction and maintenance access. The tracking pivots rotate the panels from east to west during the day to increase the capture of solar energy and have a pivoting range of up to 120 degrees. Where needed, the post length and associated pivot location would be designed with sufficient clearance to accommodate the relevant design storm and associated freeboard requirements. The panels would measure between 4 feet to 7 feet in height and stow horizontally during nighttime and as operational conditions dictate. The tracking pivots would be supported by posts that would be driven directly into the ground, without a need for concrete foundations. The north–south rows of the trackers would be grouped into rectangular arrays that extend across the project site in an east–west direction. In some cases, these arrays would be separated by 20-foot-wide maintenance corridors. The maximum height of the single axis tracker would be 7 feet above grade at the beginning and end of each day.

### **Electrical Collector System and Inverters**

The direct current (DC) power generated by the solar arrays would be transmitted using electric lines held in cable trenches or above ground cable trays to the inverters where the power would be converted to alternating current (AC) power for delivery to the grid. The inverters would be enclosed in metal cases and mounted on concrete slabs and would be dispersed among the arrays. The AC power from the inverters would then be transmitted to the onsite switch gear by underground electric lines.

Overhead communications lines would not be needed as the equipment used to control the trackers utilizes wireless technology.

### **Onsite Substation**

The substation required to step up the power generated by the project to transmission voltage would be located immediately inside the eastern property line. The substation would occupy an area that would be approximately 200 feet by 200 feet in size. Transformers would be in a concrete lined basin that is designed to contain any fluid spills. The substation would be surrounded by a 6-foot-high chain link fence topped

with barbed wire, and gravel would cover the ground surface. Lighting would be installed in the substation for security and for use at times when nighttime emergency repair work is required.

### **Generation Tie-Line and Interconnection to the Grid**

A 220 kV gen-tie line would extend from the onsite substation due east for 0.5 miles to connect with the substation at the PEF. The gen-tie line would consist of utility poles, cabling, trenches, and a corresponding dirt maintenance road. From this point, power would be transmitted to the SCE grid at the Pastoria Substation through an existing line. The project's gen-tie line would cross under the existing transmission corridor that is between the project site and the PEF.

## Battery Energy Storage System

The project would install an 80 MW BESS and associated infrastructure that would provide energy storage capacity for the electric grid. The BESS is proposed to be located adjacent to the onsite collector substation and would include rechargeable battery packs, a Battery Management System (BMS), a Thermal Management System (TMS), grid-tied bi-directional inverters, step-up transformers, and required Supervisory Control and Data Acquisition (SCADA) devices, which would all work together as a single system. The lithium ion energy storage batteries would be housed in a structure or within conex boxes. The BESS would be modular, fully integrated, and AC-coupled. In the event a single battery energy storage structure is constructed near the onsite substation, a height of approximately 30 feet (including any screening for heating, ventilation, and air conditioning [HVAC]) is anticipated as the maximum height. The batteries under this configuration are housed in open-air-style racking (similar to computer racking) approximately 8.5 feet high. The associated inverters, transformers, and switchgear would be located immediately adjacent to the structure on concrete pads. The final configuration could be different, for instance, the battery storage facility could be housed in multiple structure or containers, or a single container or structure; however, all BESS components would be constructed within the footprint identified on Figure 3-3.

The energy storage structure would also have a fire rating in conformance with County standards and specialized fire suppression systems installed for the battery rooms. All non-battery rooms would have County-approved standard sprinkler systems. The structure would also have HVAC cooling in the battery room to maintain energy efficiency. Power to the HVAC, lighting, etc. would be provided via a connection to the onsite substation service transformer with connection lines installed aboveground and/or belowground. The BESS would be unmanned, with remote operational control and periodic inspections and maintenance performed as necessary. Power stored by the BESS would be delivered via 220 kV circuits to a grid interconnection point at SCE's Pastoria Substation.

## Fencing

All fence installation requirements would be evaluated, and the best-fit scenario would be incorporated in the project site based on the County's final determination. Proposed fences would be installed around the perimeter of the two project halves (eastern parcels and western parcels), substation, and other areas requiring controlled access for safety and security purposes. The fencing is anticipated to be 6-foot-tall chain-link style fencing topped by 1 foot of three-strand barbed wire for a total height of 7 feet. A 5-inch clearance would be provided, as measured from the ground to the bottom of the fence, for wildlife passage. The fencing would remain for the life of the project.

### Site Access

Access to the site would be along an existing access way extending north from Edmonston Pumping Plant Road and reaching the southern boundary of the project site. By agreement with the property owners, the existing access road running north—south through the center of the project site would remain. The project would be constructed in two halves (eastern parcels and western parcels), one on either side of the existing access road. Two separate gated entrances on each side would provide access to the east and west halves of the facility from this road.

The project would include onsite 20-foot-wide access drives within maintenance corridors. The access drives would be compacted native surface to access the tracking solar PV panel arrays and other equipment for maintenance and to provide access for fire-fighting equipment. The locations of these corridors are identified on the site plan (Figure 3-3).

# 3.7.2 Construction

The construction activities for the project fall into three main categories: (1) site preparation; (2) system installation; and, (3) testing, commissioning, and cleanup. It is assumed that construction of the project would commence in 2021 and would last 12 to 14 months, ending in 2022 or 2023.

# Schedule and Workforce

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

The onsite construction workforce is expected to peak at up to 400 individuals; however, the average daily workforce is expected to be 190 construction, supervisory, support, and construction management personnel onsite during construction. It is anticipated that the construction workforce would commute to the project site each day from local communities and report to the designated construction staging yards prior to the beginning of each workday. Parking for construction personnel would be provided onsite. Portable toilets would be used and would be maintained by a private offsite company during the construction period.

# Worksite Safety Program

A Worker Health and Safety Program would be implemented for the project site. Program elements would include: mandatory viewing of a safety video required for all onsite workers, tailgate safety meetings, life safety, onsite fire extinguishers, and safety training specific to the trackers and solar modules.

# Fire Safety and Emergency Plan

The project would comply with all required and endorsed activities to limit the risk of injury or accidents onsite. Emergency contact information would be posted outdoors in an easily visible place and its location would be shared with all contractors during the required initial safety training before any worker is allowed onsite. Signage would be posted around the solar collection units, combiner boxes, disconnect switches and inverters, clarifying dangers and shock hazards. All National Electric Code regulations governing PV systems signage would be followed.

In the case of an electrical fire, the only features associated with the solar collection units that are flammable are the wires as the solar collection modules are constructed of silica, glass and aluminum. The inverter equipment and the transformer in the substation are large pieces of equipment that are also flammable. Fire extinguishers mounted on the inverter and transformer pads would be regularly inspected.

The solar collectors would be arranged in a series of north–south rows, with an alley between each row. The rows would be laid out in segments that are each up to 300 feet long. The segments are separated by alleyways and 20-foot-wide corridors of compacted native material which can accommodate large fire trucks.

In case of emergency, the entire plant would be shut off using a utility disconnect. The site utility disconnect would be located on the transformer pad and in an area that is accessible at all times. Master switch operation would require site access through the main gate only.

### Deliveries

During project construction, approximately 5 to 10 trucks per day would deliver loads to the site over a 12month period. Temporary staging areas would be created on the site to store construction materials and construction equipment.

### **Construction Activities**

Construction activities would proceed as follows:

- Site Preparation: Excavation and grading would be minimal and staged to minimize dust, maintain existing drainage patterns, and ensure stability of the equipment installations.
- Installation of Fencing: The permanent security fence would be installed around the perimeter of the project site. The east and west halves of the site would be separately fenced. Fencing would be designed to allow movement of sensitive wildlife such as the San Joaquin kit fox.
- Access Corridors: The access corridors would be built of compacted native material to provide access to the panels for maintenance.
- Installation of the Solar Arrays and Inverters: The solar trackers would be assembled and installed and the solar panels would be attached to them. Concrete slabs would be poured at the inverter locations, and the inverter equipment would be put in place, or prefabricated equipment would be installed.
- Electrical Work: Installation of the underground electric lines to connect the solar arrays with the inverters and the inverters to the substation.
- Installation of the Substation and Transmission Interconnection: The substation site would be fenced and covered in gravel and the substation equipment would be installed. The substation would then be connected directly to the gen-tie line leading to the PEF.

### **Site Preparation**

Currently the project site contains cattle feeding/watering stations located in the northwest quadrant and a communications-repeater structure is located in the northeast corner. The cattle feeding/watering stations would be removed as part of the project. The areas to be developed as access corridors would be smoothed and compacted. Grading and compaction would also be required at the inverter, BESS, and substation sites to provide stable bases for the installation of equipment. The primary method of vegetation removal would be to mow existing vegetation, leaving root structures in place. The concept is to maintain existing drainage

to the greatest extent practicable. Spot grading would be performed using a diesel motor grader. Stormwater retention basins would be prepared using a combination of diesel scrapers, bulldozers, and end loaders. Interior access corridors would consist of compacted native soil.

Concrete footings and pads for the inverters, substation transformers and equipment would be required. Final concrete specifications would be determined during detailed design engineering. Concrete may be produced on the project site and would be poured throughout the site by truck, or purchased from an off-site supplier and trucked in to the project site. If concrete is produced onsite a CUP for a concrete batch plant would be required pursuant to Kern County Zoning Ordinance Chapter 19.12.030 G.

### Solar Array Assembly

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

The project would use solar panels mounted on single-axis tracking pivots that would be aligned north– south in rows evenly spaced apart, providing adequate construction and maintenance access. The tracking pivots rotate the panels from east to west during the day to increase the capture of solar energy and have a pivoting range of up to 120 degrees. Where needed, the post length and associated pivot location would be designed with sufficient clearance to accommodate the relevant design storm and associated freeboard requirements. The panels would stow horizontally during nighttime and as operational conditions dictate.

During this work, there would be multiple crews working on the site with various equipment and vehicles, including special vehicles for transporting the modules and other equipment. As the solar arrays are installed, the substations and solar switchyard would be constructed and the electrical collection and communication systems would be installed. Within the solar fields, the electrical and communication wiring would be installed in underground trenches, and/or aboveground cable trays, although some of the mid-voltage collection runs and communication systems may be on overhead lines. The wiring would connect to the appropriate electrical and communication terminations and the circuits would be checked and commissioned prior to operation.

### **Construction Water Use**

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

The overall construction water usage is anticipated to be approximately 58.6 acre-feet per year (afy) during the 12-month construction period. During construction, water would be purchased from a local water purveyor. Non-potable water will be supplied from the California Aqueduct and delivered to the site through existing irrigation turnouts located at the project boundary. Water demand during construction is

expected to be the same if the project is constructed during a year with normal precipitation, a year with less-than-average precipitation, or a multiyear period of less-than-average precipitation.

## Solid and Non-Hazardous Waste

During construction, the building contractor would arrange to have trash, construction recycling, and regular recycling bins delivered to the site in accordance with Kern County Building Code requirements and guidelines. During construction, every effort would be made to minimize packaging and construction waste.

Construction recycling, regular recycling, and non-recyclable trash would be regularly picked up during the construction period. All project components would arrive by truck on pallets, which would be removed from the project site by the same truck.

## Hazards and Hazardous Materials Compliance

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

To ensure minimum exposure of construction workers to hazardous materials (e.g., construction related fuels and paints) and other hazardous materials, construction activities would comply with applicable worker protection laws and regulations, including the Occupational Safety and Health Act (OSHA), Title 9 of the Code of Federal Regulations (CFR), and Title 8 of the California Code of Regulations (CCR). The construction contractor selected for the project would be responsible for ensuring that construction workers are trained in accordance with local, state, and federal requirements for handling hazardous materials.

### Hazardous Waste

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

# 3.7.3 **Project Operations and Maintenance**

Project operation would include periodic inspection, maintenance, and repair of the solar arrays. During project operation, one to two employees would be onsite intermittently every month (less than four trips a week) to perform maintenance duties. Ongoing maintenance would include periodic panel replacement and cleaning of the solar panels to maintain performance and efficiency. The site would be monitored by personnel stationed at the PEF approximately 0.5 miles east of the project.

## Access Roads

Once operational, access to the project site would be along an existing agricultural road extending north from Edmonston Pumping Plant Road. This unnamed roadway bisects the project site north–south along the section line (T10N, R19W, Sections 11 and 12). The project would be located on each side of this road with two access points to each side of the facility from this road, for a total of four access points. Secondary access to the site would be by traveling south from Laval Road via the unnamed north–south agricultural road through the center of the site to the project's northern boundary.

The project would include 20-foot-wide maintenance corridors of compacted native surface to access the tracking solar PV panel arrays and other equipment for maintenance and provide access for fire-fighting equipment. The locations of these corridors are identified on the site plan in Figure 3-3.

## Site Security

The project site would be surrounded by a 6-foot-high chain link fence topped with 12 inches of three strand barbed wire and the east and west halves of the project would be separately fenced. The only lighting that would be installed on the project site would be at the substation for security and use at times when nighttime repair activities may be required. The solar field would not require lighting.

A sign would be provided at the entrances to the east and west halves of the project on the unnamed north– south agricultural road that identifies the project and project owner. Signage on the site would be restricted to that which is necessary for site security and for safety.

## **Utilities and Infrastructure**

No electricity, natural gas, nor telecommunications facilities are currently located on the project site, other than a third-party microwave repeater in the northeastern corner of the site. Retail electric service in Kern County is split between Pacific Gas and Electric (PG&E) and Southern California Edison (SCE). PG&E's retail service is concentrated in western Kern County while SCE serves the east County area. Refer to the interactive map of PG&E's retail electric service territory (2020PG&E, ) and SCE's retail electric service territory (SCE, 2020). The project is located in PG&E's retail electric service territory. Accordingly, electric power for construction and station power for operations would be brought to the site through a new PG&E service connection.

During construction, cellular, satellite or fiber optic line, most likely hung on the PG&E service poles, may be used for both internet and telephone systems. During operations, it is expected that there will be a communications circuit, likely a fiber optic line, connecting to the project substation designed to handle communication data traffic associated with system protection, monitoring, and control required by SCE as the transmission provider and the California Independent System Operator (CAISO) as the Balancing Authority. This communication circuit would also handle communications for the Supervisory Control and Data Acquisition (SCADA) data traffic for the plant's remote operator station located off-site. During operations, there may also be redundant wireless systems to provide a second means of communication.

# **Operational Water Use**

Panel washing would occur up to two times per year. Water for the maintenance of the solar panels would consume approximately 250,000 gallons (0.76 acre-feet) per washing, which would be transported onto the

site and sprayed onto the panels from trucks driving slowly along access corridors adjacent to the panels. Operational water would be purchased through the Tejon-Castac Water District and would be accessed at irrigation supply turnouts within the project site on the property boundaries. Annual water consumption for all uses would be approximately 1.53 afy.

### Solid and Nonhazardous Waste Disposal

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

### Hazardous Waste

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

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

# 3.7.4 Project Decommissioning

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

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

Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment off site to be recycled or disposed of at an appropriately licensed disposal facility. Removal of the solar modules would include removing the

racks on which the solar panels are attached and placing them in secure transport crates and a trailer for storage, for ultimate transportation to another facility. Once the solar panels have been removed, the racks would be disassembled and the structures supporting the racks would be removed. Site infrastructure would be removed, including the fences and the concrete pads that may support the inverters, transformers, and related equipment. The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried with the equipment being used. The fencing and gates would likely be removed, and materials would be recycled to the extent feasible. Project roads would remain in place or be restored to their pre-construction condition. The area would be thoroughly cleaned and debris removed. The development areas would be restored in accordance with the applicable land use regulations in effect at that time and decommissioning plan for the project. A collection and recycling program would be executed to promote recycling of project components and minimize disposal in landfills.

# 3.8 Entitlements Required

The anticipated approvals needed for the project include adoption of a conditional use permit, cancellation of an existing Williamson Act Land Use Contract, and general plan amendment to the Circulation Element of the Kern County General Plan. Construction and operation of the proposed solar energy facility may require additional local, State, and Federal entitlements; as well as discretionary and ministerial actions and approvals listed, but not limited to, below:

# 3.8.1 County of Kern

- Certification of Final Environmental Impact Report
- Adoption of 15091, Findings of Fact, and 15093, Statement of Overriding Considerations
- Approval of Mitigation Monitoring and Reporting Program
- Approval of Kern County Conditional Use Permit (CUP 9, Map 219)
- Approval of Williamson Act Land Use Contract Cancellation
- Approval of General Plan Amendment (Circulation) (GPA 10, Map 219)
- Approval of Grading Permits
- Approval of Building Permits
- Fire Safety Plan

# **3.8.2** Other Responsible Agency Entitlements

### Federal

- U.S. Fish and Wildlife Service (USFWS)
  - Section 10 Permit (Incidental Take and Habitat Conservation Plan Agreement) (if required)

### State

- California Department of Fish and Wildlife (CDFW)
  - Section 1600 et seq. permits (Streambed Alteration Agreements) (if required)
  - Section 2081 Permit (State-listed endangered species) (if required)
- Central Valley Regional Water Quality Control Board
  - Water Quality Certification (401 Permit) (if required)
  - Waste Discharge Requirements (if required)
  - National Pollution Discharge Elimination System (NPDES) Construction General Permit
- California Department of Transportation (Caltrans)
  - Oversized Loads Permit

### Local

- San Joaquin Valley Air Pollution Control District (SJVAPCD)
  - 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.

# 3.9 Cumulative Projects

CEQA requires that an EIR evaluate a project's cumulative impacts. Cumulative impacts are the project's impacts combined with the impacts of other related past, present, and reasonably foreseeable future projects. As set forth in the CEQA Guidelines, the discussion of cumulative impacts must reflect the severity of the potential 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 Draft EIR. As previously stated, and as set forth in the CEQA Guidelines, related projects consist of "closely related past, present, and reasonable foreseeable probable future projects that would likely result in similar impacts and are located in the same geographic area" (CCR, Title 14, Division 6, Chapter 3, Section 15355).

Unless otherwise noted in each chapter, the geographic scope for the cumulative impact analysis is dictated by the particular discipline examined in that chapter and is, generally, the Southern San Joaquin Valley area as depicted in **Figure 3-10**, *Cumulative Projects Map*. The Southern San Joaquin Valley includes portions of the southwest corner of Kern County. The study area is bounded by the Tehachapi Mountains to the south and southeast, the Emigdio Mountains to the west/southwest, and the Valley Floor south of the intersection of I-5 and SR-166 to the north.

This geographic scope is selected because of its relatively uniform terrain, soil conditions, climate, and habitat value; its low population and development density; and the region's common groundwater basin and water supply considerations. Immediately south of Bakersfield, the valley does not feature the same mountain viewsheds found in the Southern San Joaquin Valley, and includes more densely developed areas. Projects within Bakersfield's urban core are not considered to be part of the geographic scope for the cumulative discussion. These project are of a distinctly urban nature and, in many respects would not have the same type of potential impacts as the project and others in the southern San Joaquin Valley area. Further, inclusion of urban projects could dilute, improperly magnify, or otherwise impair analysis of certain project impact areas.

A list and description of past, present, and reasonably foreseeable projects near the project can be found in **Table 3-3**, *Cumulative Projects List*.





#### FIGURE 3-10: CUMULATIVE PROJECTS MAP

Project Name/ CASE ID		Project Location	Case Type	Request	Project Site APN	Acreage				
KERN COUNTY PROJECTS – Figure 3-10										
1-	1-Mile Project List									
1.	Griffith Company/Mike Goddard	39439 Edmonston Pumping Plant Road	CUP	Modification of CUP to allow expansion of a surface mining and reclamation plan	241-190-21	219.47				
2.	Grapevine Specific and Community Plan (2019) by Tejon Ranchcorp	East of Interstate 5 & Grapevine	SPA (Various GPA, ZCC & SPA)	Specific & Community Plan		8010				
6-Mile Project List										
1.	Griffith Company/Mike Goddard	39439 Edmonston Pumping Plant Road	CUP	Modification of CUP to allow expansion of a surface mining and reclamation plan	241-190-21	219.47				
2.	Grapevine Specific and Community Plan (2019) by Tejon Ranchcorp	East of Interstate 5 & Grapevine	SPA (Various GPA, & ZCC & SPA)	Specific & Community Plan		8010				

#### TABLE 3-3:CUMULATIVE PROJECTS LIST

# 4.1.1 Introduction

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

# **Visual Concepts and Terminology**

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

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

**Key Observation Point (KOP)**—one or a series of points on a travel route or at a sensitive use area, such as a residence, where the view of a project would be the most revealing.

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

**Scenic highway**—any stretch of public roadway that is designated as a scenic corridor by a federal, State, or local agency.

**Sensitive receptors or sensitive viewpoints**—viewer responses to visual settings are inferred from a variety of factors, including distance and viewing angle, type of viewers, number of viewers, duration of view, and viewer activities. The viewer type and associated viewer sensitivity are distinguished among project viewers in recreational, residential, commercial, military, and industrial areas. Viewer activities can range from a circumstance that encourages a viewer to observe the surroundings more closely (such as recreational activities), to discouraging close observation (such as commuting in heavy traffic). Residential viewers typically have extended viewing periods and are generally considered to have high visual sensitivity. For this reason, residential views are typically considered sensitive. Viewers from public parks, recreational trails, and/or culturally important sites also have high visual sensitivities; therefore, such

locations are considered sensitive viewpoints. Viewers in commercial, military, and industrial areas are not typically focused on the views and the areas do not promote enjoyment of views; therefore, viewers in these locations are assumed to have low sensitivity.

**Viewing distance zones**—the landscape is subdivided into three distance zones based on relative visibility from travel routes or observation points. The three zones are: foreground, middleground, and background. The foreground zone includes areas less than 0.25 miles away, the middleground zone includes areas 0.25 miles 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 in the south-eastern portion of Kern County within the San Joaquin Valley. The southern end of the valley is surrounded by the Sierra Nevada Mountains to the east, the Tehachapi and San Emigdio Mountains along the south, and the Temblor Range (part of the Coastal Ranges) along the west.

The landscape of the vast San Joaquin Valley region is dominated by agricultural operations, oil production/extraction, and pockets of urbanized areas, all three of which have altered the once-natural, undeveloped landscape. The ground plane generally slopes downward from south at the Tehachapi and San

Emigdio Mountains to the north and flattens out into the San Joaquin Valley region. The landscape is mostly flat, lacking significant topographic relief, and tends to be visually monotonous because of the repetitive expanse of agricultural and extractive land uses. There is little variety of vegetative covers (i.e., grazing grasses, croplands, solitary trees, and residential landscaping). While there are few panoramic views within the San Joaquin Valley, the eastern, western, and southern edges of the San Joaquin Valley, where the project is located, do provide viewsheds including views of the Tehachapi and San Emigdio Mountains to the south.

These topographical elements are physiographically separated from the flat valley floor; their summits and ridgelines are important focal points throughout the county and are an excellent example of how adjacent scenery can enhance the visual quality of a landscape devoid of topographic relief and contribute positively to the area's scenic quality. From certain vantage points, as one nears the eastern, western, and southern edges of the valley floor, mountainous topographic features rise abruptly from the ground plane, adding visual variety and dramatic focal points; this is considered high quality adjacent scenery.

Over the years, Kern County has experienced a great deal of urbanization, resource extraction, and renewable energy development. Urbanization has resulted in the introduction of numerous manmade modifications into the viewshed, including residential, commercial, and industrial uses; roadways and highways; and utilities to support development. In addition, mineral, oil, and natural gas extraction activities are common to the region. Also, the county is a significant producer of renewable energy including hydroelectric, wind, solar, and geothermal power generation. Resource extraction and renewable energy production have both introduced many large-scale industrial facilities into the viewshed. Common visual elements include oil wells, storage tank batteries, access roads, and electrical and water conveyance infrastructure that tend to dominate the visual landscape in the western valley.

While urbanization and utility-scale development within the county have resulted in the development of large tracts of farmland, the pervasiveness of agricultural farming practices has helped maintain the county's agricultural and open space character. Generally, the aesthetic features of the regional visual environment are relatively uniform, with broad, flat landscapes leading to distant mountains and interspersed with urban, rural, and industrial development in varying densities and intensities.

# **Local Character**

The nearest populated areas to the project site are the unincorporated communities of Grapevine, Wheeler Ridge, Mettler, and Lebec, which are located approximately 3 miles west, 5 miles northwest, 9 miles northwest, and 5 miles southwest of the project site, respectively. The City of Bakersfield, located approximately 25 miles to the north, is the nearest metropolitan area in relation to the project site. Other populated areas within the vicinity are the City of Arvin, the unincorporated community of Weedpatch, the unincorporated community of Lamont, the unincorporated communities of Frazier Park, Pinion Pines, and Pine Mountain Club (collectively referred to as the Mountain Communities) which are located approximately 15 miles north, 18 miles north, 19 miles north, and 9.5 miles southwest of the project site, respectively. Land uses in the region consist largely of agriculture with a mix of row crops and grazing land. The general area to the north of the project site is primarily used for almond and pistachio farming. The area to the south and west of the project site is predominantly grazing land while the area to the east has a few vineyards. Several rural access roads are located in the project area. The immediate project area has few nearby residences. The nearest residence is about 2.5 miles to the northwest and there is a small cluster of homes about 2.7 miles northwest. The Pastoria Energy Facility (PEF), a natural gas-fired, combined-cycle power plant, is located approximately 0.5 miles east of the project site. The California

Aqueduct, which runs east-west in the vicinity of the project and extends to the Department of Water Resources' Edmonston Pumping Plant, is approximately 0.7 miles south of the project site. There is also a gravel quarry operation approximately 0.8 miles to the southeast of the site, between the PEF and Edmonston Pumping Plant.

Elevations in the project area range from approximately 900 feet above mean sea level (amsl) on the valley floor just north of the project site to 4,815 feet at Grapevine Peak, which is 3.65 miles southwest of the project site. Elevations across the project site range from approximately 1,169 feet at the southwest corner to 1,027 feet at the northeast corner, for a change of 142 feet over 1.41 miles (approximately 2 percent slope). As described in more detail in Section 4.4, *Biological Resources*, the project site is comprised of undeveloped former agricultural lands. The wild oats grassland vegetation community dominates the project site as a result of previous grazing. There are no structures within the project boundaries.

# **Scenic Highways**

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, there are no Officially 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 California Scenic Highway Mapping System identifies State Route (SR)-14 north of Mojave and SR-58 east of Mojave as Eligible State Scenic Highways, which is distinct from an officially designated scenic designation. The project is located approximately 50 miles west of these Eligible State Scenic Highways and is separated from these highways by the Tehachapi Mountains. The nearest Officially Designated State Scenic Highway to the project site is SR-2, which is located over 60 miles to the southeast of the project site in Los Angeles County and the project site is separated from SR-2 by several mountain ranges, including the Tehachapi and San Gabriel Mountains.

In addition to the State Scenic Highway Mapping System, the Kern County General Plan Circulation Element designates local scenic routes within Kern County and defines a scenic route as any freeway, highway, road, or other public right-of-way, which traverses an area of exceptional scenic quality and must be officially set as a Scenic Route by the Kern County Board of Supervisors or the State of California. As local scenic routes are not considered officially designated by the State, they are not analyzed below. The Kern County General Plan Circulation Element identifies several local scenic routes within Kern County; however, none of the local scenic routes (i.e., along State Route 14 and State Highway 395, State Route 58, and State Route 41) are in proximity to the project site. The Kern County General Plan Program EIR does identify Interstate (I)-5 as a scenic route and lists the sites of interest near this route, including the Edmonston Pumping Plant, Sebastian Indian Reservation, Fort Tejon, Top of Grapevine Pass, Frazier Park, Big Trees, Mt. Cerro Noroests (Mt. Abel), and Bitter Creek National Wildlife Refuge. This route is approximately 3.31 miles from the project site and begins near the project site at Grapevine on I-5 and extends south to Frazier Mountain Park Road, and continues west to SR-33, where it turns north and ends in Maricopa.

As part of the Kern County General Plan Circulation Element goals, policies, and implementation measures, Kern County adopted a Scenic Corridor Combining District to designate areas which contain unique visual and scenic resources as viewed from a major highway or freeway. The project site is not within a Scenic Corridor Combining District.

# **Lighting Environment**

The project site is currently comprised of agricultural land for grazing with no existing site lighting. No structures are currently present on the project site that would be a source of light. Additionally, no sources of daytime glare occur on the site. There is minimal offsite lighting beyond small fixtures for individual structures, including agricultural support buildings and residences. Such structures are found throughout the site vicinity. There is no local roadway lighting. Daytime glare conditions are also minimal, being generally limited to sunlight reflecting from agricultural support structures, on- and off-road vehicles, holding ponds, and water retention basins.

# 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 2 percent of incoming sunlight, which is similar to water and less than soil and wood shingles. Some of the concern and misconception is likely due to the confusion between solar PV systems and concentrated solar power (CSP) systems. CSP systems typically use an array of mirrors to reflect sunlight to heat water or other fluids to create steam that turns an electric generator (Palmer and Laurent, 2014).

Despite their low potential to create glare, PV panels can reflect sunlight skyward toward the light source, creating a potential glare impact for motorist or 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, potential 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. Potential glare effects would have its greatest impact on westbound travelers in the early morning hours, when the sun is rising in the east.

# 4.1.3 Regulatory Setting

# Federal

### National Scenic Byways Program

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

## 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 Officially Designated State Scenic Highways within Kern County and the project site is not located directly adjacent to any Eligible State Scenic Highway. The closest section of highways eligible for a State scenic highway designation is SR-58 and SR-14. As discussed above, the project is located approximately 50 miles west of these Eligible State Scenic Highways and is separated from these highways by the Tehachapi Mountains.

### Local

### Kern County General Plan

The Land Use, Open Space, and Conservation Elements of the Kern County General Plan 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 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 Circulation Element also identifies several local scenic routes within Kern County; however, none of the local scenic routes (i.e., along State Route 14 and State Highway 395, State Route 58, and State Route 41) are in proximity to the project site. The Kern County General Plan Program EIR does identify I-5 as a scenic route and lists the sites of interest near this route, including the Edmonston Pumping Plant, Sebastian Indian Reservation, Fort Tejon, Top of Grapevine Pass, Frazier Park, Big Trees, Mt. Cerro Noroests (Mt. Abel), and Bitter Creek National Wildlife Refuge. This route is approximately 3.31 miles from the project site and begins near the project site at Grapevine on I-5 and extends south to Frazier Mountain Park Road, and continues west to SR-33, where it turns north and ends in Maricopa.

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 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 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 5: Energy Element

#### 5.4.7: Transmission Lines

#### Goal

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

#### Policy

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

### Kern County Zoning Ordinance

#### Chapter 19.81: 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 January 2020 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 KOPs within vicinity from which to evaluate potential visual impacts resulting from implementation of the 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; and
- 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)

To represent views that would be experienced from sensitive viewpoints, KOPs were selected. KOPs are single viewpoints that appropriately reflect the impact implementation of the project would have on one or more sensitive receptors. Potential 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.

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 motorists are likely to be on the I-5, consisting of travelers and truckers (shipping and hauling), who would be less sensitive to changes in the view.

The project site is located in a rural area. As described in Section 4.1.2, *Environmental Setting*, the nearest residence is about 2.5 miles to the northwest and there is a small cluster of homes about 2.7 miles northwest. These residences' view of the project site is impeded by orchards and topographical features. No parks, or designated recreational areas are located in the project vicinity.

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

## **Simulation Preparation**

Visual simulations of the project from the identified KOPs identified in **Table 4.1-1**, *Key Observation Points*, 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 January 2020 and simulations were prepared by VisionScape using the assumptions and methodologies listed below in **Table 4.1-2**, *Visual Simulation Methodology and Assumptions*, below.

КОР	Location	Representative Sensitive Viewers
1	From east of I-5 along Edmonston Pumping Plant Road looking northeast toward the project site.	Motorists on I-5 as they pass the project site, located approximately 3.2 miles away.
2	From northbound travel lanes of I-5 looking east towards the project site.	Motorists on I-5 as they pass the project site, located approximately 3.5 miles away.
3	From Laval Road in the community of Wheeler Ridge looking southeast toward the project site.	Employees located in the community of Wheeler Ridge.
4	From the intersection of Laval Road and Rancho Road looking south toward the project site.	Rural residences in the project vicinity travelling along Laval Road and Rancho Road.

<b>TABLE 4.1-1:</b>	KEY OBSERVATION POINTS
1 ADLL <b>7.1</b> -1.	MET ODSERVATION I UNITS



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



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

Photography from Key Observation Points	<ul> <li>Photos were taken on a hazy day with scattered clouds in January 2020.</li> <li>Canon 5D digital camera with a 35 to 52 mm zoom</li> </ul>
Visual simulation assumptions	<ul> <li>Solar modules would be up to 7 feet in height and separated by approximately 12 feet.</li> <li>Modules on single axis tracking system were used to show the worst-case visual impact.</li> <li>One substation is included, covering an area of 200 feet by 200 feet.</li> <li>Substation and Battery Energy Storage System (BESS) elements are typically 10 to 30 feet in height.</li> <li>Gen-tie poles were simulated using a conservative maximum of approximately 185 feet in height; however, note that the gen-tie pole height under the project would likely reach approximately 95 feet.</li> <li>Fencing is 7 feet in height, including 6 feet of chain link topped by one foot of barbed wire.</li> </ul>
	• 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 began with a determination of proposed camera locations and / or station points. Upon review and approval of camera locations VisionScape coordinated the engineered site photography and scheduled the initial site visit with County staff and / or project planner. This included identification of reference points with Global Positioning System (GPS) coordinates and specific fields of vision for each view. Concurrently, the modeling team developed a computer model of the proposed solar modules to illustrate the project's appearance from different points of view. 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 were then applied. The next phase was assembly, during which the modeling was inserted into photographs taken during the field study using a full-frame camera and camera match technology. 3D pads and boundary outlines were used to situate the modules to the proposed positions as shown on the Computer-Aided Design (CAD) drawings provided. During this process, a computer model camera was aligned with the onsite photography to depict the project setting within each view. 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.

 TABLE 4.1-2:
 VISUAL SIMULATION METHODOLOGY AND ASSUMPTIONS

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 manmade 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.

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.	Adjacentscenerymoderatelyenhancesoverall 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 suppo	rted by written justification	

 TABLE 4.1-3:
 VISUAL QUALITY RATING SYSTEM

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

SOURCE: BLM 1986

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.

# 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 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.

The aesthetic features of the existing visual environment surrounding the project site are relatively uniform, with predominantly agricultural fields and associated farming-related structures such as water retention basins. In addition, the Sierra Nevada Mountains are visible in the distant background to the east and the Tehachapi and San Emigdio Mountains to the south and provide a contrast to the uniform topography of the San Joaquin Valley. The site is also close to existing electrical production facilities [i.e., the PEF and Southern California Edison (SCE) Pastoria Substation located approximately 0.5 miles east of the project site], which include associated power lines, transformers, etc. While there are no officially designated scenic vistas, the viewshed of the Tehachapi and San Emigdio Mountains experienced by persons traveling south on I-5 in passenger vehicles could be considered a scenic vista. Placement of solar cells, the gen-tie transmission line, and the associated facilities on the site, including the interconnection facilities, would alter the views of the project area, and persons traveling in passenger vehicles on adjacent roads, including I-5, could observe alterations within the viewshed that include the Tehachapi and San Emigdio Mountains. However, altered views would be limited due to the level terrain and the limited height of the panels. The gen-tie transmission line poles would be similar in size to existing nearby utility poles. As such, the project would not result in significant impacts related to having a substantial adverse effect on a scenic vista. Therefore, impacts would be less than significant.

### **Mitigation Measures**

No mitigation would be required.

## Level of Significance

Impacts would be less than significant.

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

According to Caltrans' California Scenic Highway Mapping System, there are no Officially Designated State Scenic Highway in the vicinity of the project area (Caltrans 2017). The closest section of highways eligible for a State scenic highway designation is SR-58 and SR-14. The project is located approximately 50 miles west of these Eligible State Scenic Highways and is separated from these highways by the Tehachapi Mountains. Given this distance and intervening topography, the project would not be visible from any Officially Designated or Eligible State Scenic Highway. The lands surrounding the site are predominantly used for crops or grazing. Other uses in the project area include gas and oil extraction, scattered rural residences, and power generation

facilities. The construction of the solar facility and placement of the gen-tie transmission line would change the views from public roads; however, these alterations would not damage scenic resources within a state scenic highway. Therefore, construction of the project would not change the viewshed from any Officially Designated or Eligible State Scenic Highway and therefore there would be no impact.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

No impact.

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 under Section 4.1.2, *Environmental Setting*, existing development in the project vicinity includes agricultural uses, rural access roads, scattered rural residences, cattle ranching and maintenance facilities, mining and extraction, electrical transmission infrastructure, and renewable energy development. As the project is located within a nonurbanized area, the analysis below will focus on whether development of the project would substantially change the existing visual character or quality of public views of the site and its surroundings.

### Construction

Construction activities associated with the project would create temporary changes in views of the project site. Furthermore, construction activities would introduce a considerable amount of heavy equipment, including backhoes, compactors, tractors, and trucks, into the viewshed of all viewer groups. During construction, there would be multiple crews working on the site with various equipment and vehicles, including special vehicles for transporting the modules and other equipment. The influx of construction vehicles, equipment, and worker vehicles would create visible contrast within the rural and primarily undeveloped setting of project site. However, vehicles, equipment, and construction activity would be temporary in nature (12 months) and would be limited to active areas of construction as opposed to the entirety of the project site at the same time.

Viewers travelling along roads in proximity to the project site are accustomed to seeing heavy machinery associated with agricultural activities, mining activities, and oil and gas extraction. In addition, the visual effects associated with the presence of construction vehicles, equipment, and workers in the project area landscape would be limited in duration and would be spatially limited at any given time to the active area of construction. Therefore, impacts to existing visual character or quality of the project site and surrounding area during construction of the project would be less than significant.

## Operation

In order to determine whether the project would substantially degrade the existing visual quality of the project site, this analysis compares the existing visual setting with visual simulations of the post-project

visual conditions. As described above, four 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 **4.1-5**. KOPs are described in Table 4.1-2, above. Impacts associated with operation of the project would vary by viewer location and are discussed below by KOP. The rating system and impacts methodology are discussed in the *Rating Visual Quality* section above.

**KOP 1. Figure 4.1-2**, *KOP 1 – Existing and Simulated Views from east of I-5 along Edmonston Pumping Plant Road Looking Northeast towards the Project Site*, shows views from Edmonston Pumping Plant Road located approximately 3.2 miles west of the project site. This KOP reflects views to the project site that would be experienced by motorists travelling north on I-5 as they pass the project site. The pre-development views from KOP 1 shows that the landscape is relatively flat and covered with low-lying grassland in the foreground and middle ground. Dark conical foothills and limited mountains are visible in the background to the east. No development is shown within this viewpoint. The post-development view from KOP 1 (see Figure 4.1-2) would not include visible modifications (i.e., solar arrays) due to the distance between the project site and KOP 1. As discussed in **Table 4.1-4**, *Visual Quality Rating Analysis – KOP 1*, the predevelopment score is 10, and the post-development score is 10. Since the difference in scores would be 0 points, there would be no visual impacts from KOP 1.

**KOP 2. Figure 4.1-3**, *KOP 2* – *Existing and Simulated Views from Northbound Travel Lanes of 1-5 Looking East towards the Project Site*, shows views from northbound I-5 looking east toward the project site. This KOP accurately reflects views that state route motorists would experience as they pass the project site (located approximately 3.5 miles away). The pre-development views from KOP 2 depict broad and flat terrain covered with low golden grasses in the foreground and middle ground. Note that the color of the grass changes seasonally and would be green in color during the spring and part of the winter with the golden hue prominent during the summer and fall. Similar to KOP 1, dark conical foothills and limited mountains are visible in the background to the east. The facilities associated with the PEF and the SCE Pastoria Substation are visible from this KOP. The post-development view from KOP 2 (see Figure 4.1-3) would include relatively faint modifications (i.e., solar arrays) that would be located low in the background landscape. The solar panels and associated elements would be dark to light grey in color, which would contrast with the existing muted earth tones in the foreground and middleground, and the thin vertical lines of gen-tie support structures would be light and greyish. 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 9. Since the difference in scores would be 3 points, visual impacts from KOP 2 are potentially significant.

**KOP 3. Figure 4.1-4**, *KOP 3* – *Existing and Simulated Views from the Community of Wheeler Ridge Looking Southeast towards the Project Site*, shows views from Laval Road in the Community of Wheeler Ridge looking southeast towards the project site. This KOP accurately reflects views to the project site (located approximately 3.9 miles away) that employees located in Wheeler Ridge would experience. The pre-development views from KOP 3 depicts broad and flat terrain with a paved road and a signalized intersection in the foreground, and brown shrubs and golden grasses in the middle ground. Note that the color of the grass changes seasonally and would be green in color during the spring and part of the winter with the golden hue prominent during the summer and fall. No other development is visible in the background, and mountains are visible in the distance. The post-development view from KOP 3 (see Figure 4.1-4) would not depict the solar panels or other support structures. As discussed in **Table 4.1-6**, *Visual Quality Rating Analysis – KOP 3*, the pre-development score is 10, and the post-development score is 10. Since the difference in scores would be 0 points, there would be no visual impacts from KOP 3.



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT

Existing View

CUP 9, Map 219; Williamson Act Land Use Contract Cancellation 19-02; GPA 10, Map 219



#### FIGURE 4.1-2: KOP 1 - EXISTING AND SIMULATED VIEWS FROM EAST OF I-5 ALONG EDMONSTON PUMPING PLANT ROAD LOOKING NORTHEAST TOWARDS THE PROJECT SITE

## TABLE 4.1-4: VISUAL QUALITY RATING ANALYSIS – KOP 1

#### Sensitive Receptor: Motorists on I-5 west of 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	2	0	No Impact
Explanation:	Relatively flat terrain covered with low-lying grasses with foothills in the middle ground and mountainous terrain in the background.	The flat topography of the area would not be noticeably modified by project development.		
Detail:	Flat landforms dominate landscape and hills and n of solar arrays and asso would not obstruct or su There would be no impa	the foreground and middle ground of nountains area elements of interest. The ociated gen-tie infrastructure on the bstantially interrupt views of hills and ct to landforms resulting from project	of the visible he low height project site d mountains. t operations.	
Vegetation	3	3	0	No Impact
Explanation:	Low, grassland; similar species present in the visible landscape.	Grassland vegetation would be removed from the solar sites in the background, but effects would be obscured by distance.		
Detail:	Both the pre- and post-de covering the valley floor project development wo associated with vegetation from KOP 1, low grassla No impacts to vegetation	evelopment views depict low, grasslant Removal of vegetation in the backgould not be noticeable due to distant on removal would not be prominent, a and vegetation would continue to cov a would occur.	nd vegetation ground due to nce. Contrast nd as viewed er the valley.	
Water	0	0	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 i impacts to water features	included in pre- or post-developments would occur.	nt views. No	
Color	2	2	0	No Impact
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.	The solar facility and associated components would not be visible from this view.		

## TABLE 4.1-4: VISUAL QUALITY RATING ANALYSIS – KOP 1

#### Sensitive Receptor: Motorists on I-5 west of 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 br and middle ground. So Background colors wou view. There would be no	e foreground m this KOP. structed from KOP 1.		
Adjacent Scenery	2	No Impact		
Explanation:	Middle ground hills and distant mountains to the southeast enhance the view.	Hills and mountains would remain visible and would not be substantially obstructed by project components.		
Detail:	The project would not m adjacent scenery. No imp	odify, substantially obstruct, or inter pact to views of adjacent scenery wo	rupt views of uld result	
Scarcity	1	1	0	No Impact
Explanation:	The available view is broad but somewhat limited by middle ground hills. There are no unique aspects from this view. Similar views exist throughout the region.	Views would not be modified by project operation.		
Detail:	Existing views offered fr not particularly unique accommodate the project not result in impacts to v	rom I-5 are typical of the area. Visible or unusual. Alteration of the et would not be visible from this KC view scarcity.	e features are landscape to DP and would	
Cultural Modifications	0	0	0	No Impact
Explanation:	Cultural modifications include a paved road and transmission lines, and denuded terrain (located to the east).	Project development would not be visible from this KOP.		
Detail:	Existing cultural modif features are compatible v components would be a would not be visible from			
Totals:	10	10	0	No Impact



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT

Existing View

CUP 9, Map 219; Williamson Act Land Use Contract Cancellation 19-02; GPA 10, Map 219



FIGURE 4.1-3: KOP 2 - EXISTING AND SIMULATED VIEWS FROM NORTHBOUND TRAVEL LANES OF I-5 LOOKING EAST TOWARDS THE PROJECT SITE

## TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS - KOP 2

Sensitive Receptor: Motorists on I-5 as they pass the project site.

Pre-development and post-development conditions are depicted in Figure 4.1-3.

Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	3	3	0	No Impact
Explanation:	Broad and flat terrain in the foreground with tan hills in the middle ground and a low, dark brown mountain range in the distance.	Project development would not visibly modify the area's topography as viewed from the KOP.		
Detail:	The pre- and post-develop foreground, tan hills to mountain in the backgr project site and gen-tie I As such, Project develop However, given the view and post-development, the	opment view is dominated by flat valle o the southeast in the middle ground ound. Views of the project would be line. Solar arrays are prominent in the r oment would noticeably modify landform w distance and small degree of change here would be no impacts to landforms to	y terrain in the and a distant limited to the niddle ground. ms in the view. e between pre- from this KOP.	
Vegetation	2	2	0	No Impact
Explanation:	Low, grassland; similar species present in the visible landscape.	Grassland vegetation would be removed from the solar sites in the background, but effects would be obscured by distance.		
Detail:	Both the pre- and post- covering the valley floo project development w associated with vegetati from KOP 2, low grassla impacts to vegetation we	development views depict low, grassle or. Removal of vegetation in the back yould not be noticeable due to dista- tion removal would not be prominent, and vegetation would continue to cover puld occur.	and vegetation ground due to ance. Contrast and as viewed the valley. No	
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.		ws. No impacts	
Color	2	1	1	Less than
Explanation:	Shades of yellow, green and brown are display by soil and vegetation, which dominate the foreground and middle ground. Tan hills and low dark brown mountains rise from the valley.	The dark color of solar arrays would contrast with the drab tones displayed by terrain and vegetation in the foreground. The light greyish color of gen-tie support poles and lines would not be visible from this view. Color contrast would be enhanced when viewed against the backdrop of a blue desert sky.		Significant

## TABLE 4.1-5: VISUAL QUALITY RATING ANALYSIS – KOP 2

#### Sensitive Receptor: Motorists on I-5 as they pass the project site.

Pre-development and post-development conditions are depicted in Figure 4.1-3.

Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Detail:	Pre- and post-developme earth tones. The dark line but would be similar in to	ent views are and would continue to be e displayed by solar arrays would be noti- one to the color displayed by low mounta	e dominated by ceable in views ins in the view.	
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. Visible solar arrays and fencing would not block hills or mountains from view.		
Detail:	The project would not adjacent scenery. No im	modify, substantially obstruct, or inte pact to views of adjacent scenery would	rrupt views of d 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 background would be modified by the introduction of solar arrays and the gen-tie line.		
Detail:	The view from I-5 is landforms and vegetation modification resulting for view scarcity.	typical of views available throughout on are not particularly unique or unust rom project development would result i	t the area and al. Landscape n no impact to	
Cultural Modifications	1	-1	2	Less than Significant
Explanation:	Cultural modifications are industrial in nature and are not easily perceptible from this KOP.	Project development would add low-profile solar arrays and faint, vertical gen-tie 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 gen-tie, the addition of cultural modifications to the background of KOP 2 would result in less-than-significant impacts.			
Totals:	12	9	3	Potentially Significant



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.1-4: KOP 3 - EXISTING AND SIMULATED VIEWS FROM THE COMMUNITY OF WHEELER RIDGE LOOKING SOUTHEAST TOWARDS THE PROJECT SITE

## TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3

**Sensitive Receptor: Employees located in the community of Wheeler Ridge.** Pre-development and post-development conditions are depicted in Figure 4.1-4.

Rated Feature	Pre-development Condition	Post-development Score	Difference in Scores	Impact Significance
Landform	2	2	0	No Impact
Explanation:	Broad and flat terrain in the foreground and middle ground with a paved road and a signalized intersection. A line of relatively low mountains is visible in the distance.	The flat topography of the area would not be noticeably modified by project development.		
Detail:	Broad and flat landforms dominate landscape. However, mountains of interest to the otherwise low and arrays and gen-tie lines are not of would be no impact to landforms a	e the foreground and middle ground can be seen in the background. M flat landscape. Project elements i easily identifiable within this vie resulting from project operations.	d of the visible Aountains add ncluding solar wpoint. There	
Vegetation	3	3	0	No Impact
Explanation:	Low and mounded desert shrubs cover the roadside; little variation in vegetation is visible.	Solar arrays would not be visible from this view and no change in the vegetation across the landscape would occur. Vegetation removal associated with installation of gen-tie structures would not be visible.		
Detail:	The visual effects of vegetation Therefore, no impacts to vegetation	removal would not be visible fr on would occur.	om this view.	
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 water features would occur.	pre- or post-development views.	No impacts to	
Color	2	2	0	No Impact
Explanation:	Foreground and middle-ground terrain, paved roadway, and vegetation display shades of grey, white, yellow, green, and brown. Mountains in the background include shades of brown and tan and mountains in the distance appear to be hazy dark brown to dark grey/blue.	The Solar facility and associated components would not be visible from this view.		
Detail:	The foreground and middle grou brown, as well as grey, black, an The solar arrays as well as the gen	nd are dominated by shades of y d white from the paved signalize -tie structures and lines would not	yellow, green, d intersection. be visible due	

## TABLE 4.1-6: VISUAL QUALITY RATING ANALYSIS – KOP 3

**Sensitive Receptor: Employees located in the community of Wheeler Ridge.** 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
	to distance. At KOP 3, solar facilitation the landscape.	ity components would be submiss	ive features in	
Adjacent Scenery	3	3	0	No Impact
Explanation:	Views are enhanced by mountains in the distance.	Hills and mountains would remain visible. Solar arrays, which are not visible from this viewpoint, would not block hills or mountains from view.		
Detail:	Visibility of hills and mountains There would be no impact.	would not be altered by project	development.	
Scarcity	1	1	0	No Impact
Explanation:	The eastern extent of the broad view is limited by distant mountains. There are no particularly unique or unusual aspects in the view, and similar views are present throughout the region.	The background would be slightly modified by the introduction of solar arrays, but due to the distance would not be clearly visible from this view.		
Detail:	The view from the community of throughout the area and landform unusual. Landscape modification in no impact to view scarcity.	of Wheeler Ridge is typical of vi as and vegetation are not particular resulting from project development	ews available arly unique or at would result	
Cultural Modifications	-2	-2	0	No Impact
Explanation:	The landscape contains substantial cultural modifications resulting from the paved signalized intersection that predominates the foreground. The intersection contrasts in color and character with the middleground and foreground, which are dominated by low- lying desert shrubs, as well as the dark brown mountains in the distance.	The project would introduce numerous manufactured elements to the background, but these elements would not be visible from this view.		
Detail:	The landscape contains substantia signalized intersection that domin project operation, given the distar project would not substantially a Therefore, project operation would	l cultural modifications resulting f hates the foreground view. Howev ice and lack of visibility of the sol alter the existing cultural landsca d result in no visual impact.	rom the paved ver, even with ar facility, the pe of KOP 3.	
Totals:	10	10	0	No Impact

**KOP 4. Figure 4.1-5**, *KOP 4 – Existing and Simulated Views from the Intersection of Laval Road and Rancho Road Looking South toward the Project Site*, shows views from the intersection of Laval Road and Rancho Road looking south towards the project site (located approximately 2.2 miles away). This KOP accurately reflects views to the project site that residents and agricultural workers would experience from north of the project site. The pre-development views from KOP 4 depict relatively flat terrain with active agriculture and a paved road visible in the foreground and more low shrubs, grass, development and utility poles and electrical lines visible in the middle ground. Large portions of the middle ground are shielded from view by the active agriculture present across Laval Road, which includes a dense orchard. The background includes views of tan hills and faint views of mountain ranges can be seen in the distance. As shown in the post-development view from KOP 4 (see Figure 4.1-5), no elements of the project are visible from this KOP due to the existing dense orchards in the middle-ground and the flat topography that characterizes the surrounding area. As discussed in **Table 4.1-7**, *Visual Quality Rating Analysis – KOP 4*, the pre-development score is 11, and the post development score is 11. Since the difference in scores would be 0 points, there would be no visual impacts from KOP 4.



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.1-5: KOP 4 - EXISTING AND SIMULATED VIEWS FROM THE INTERSECTION OF LAVAL ROAD AND RANCHO ROAD LOOKING SOUTH TOWARD THE PROJECT SITE

## TABLE 4.1-7: VISUAL QUALITY RATING ANALYSIS – KOP 4

#### Sensitive Receptor: Residences located near the project site.

Pre-development and post-development conditions are depicted in Figure 4.1-5.

<b>Rated Feature</b>	Pre-Development Condition	Post-Development Score	Difference in Scores	Impact Significance
Landform	3	3	0	No impact
Explanation:	Flat terrain in the foreground with active agriculture and a paved road. Low and dark silhouettes of mountains to the northeast in the background	The flat topography of the area would not be noticeably modified by project development. Middleground topography is shielded by the active agriculture and solar modules would not modify existing views.		
Detail:	Flat landforms with active agric and middle-ground landscape. T form that adds interest to the low be visible. The project would not in the view.	ulture and a paved road occupy The distant mountains display a and flat landscape. Gen-tie struct substantially alter or modify exis	the foreground unique conical ures would not ting landforms	
Vegetation	3	3	0	No impact
Explanation:	The immediate foreground consists of graded soil with no apparent vegetation. On the eastern side of the paved road, active agriculture covers the view from this KOP.	The development of solar modules and other components would not be visible from this viewpoint.		
Detail:	The visual effects of vegetation Therefore, no impacts to vegetati	removal would not be visible f on would occur.	rom this view.	
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 water features would occur.	n pre- or post-development views.	No impacts to	
Color	2	2	0	
Explanation:	Foreground and middle-ground vegetation and terrain display shades of yellow, green, and brown. The middle ground is shielded from view by the agriculture, while the mountains in the background are hazy dark grey/blue.	The Solar facility and associated components would not be visible from this view.		No Impact
Detail:	The foreground and middle grour brown. Solar modules and suppor such, color contrast would be abs	nd are dominated by shades of yell rt poles, would not be visible from sent due to project site distance from	low, green, and n this view. As om KOP 4.	

## TABLE 4.1-7: VISUAL QUALITY RATING ANALYSIS – KOP 4

#### Sensitive Receptor: Residences located near the project site.

Pre-development and post-development conditions are depicted in Figure 4.1-5.

<b>Rated Feature</b>	Pre-Development Condition	Post-Development Score	Difference in Scores	Impact Significance
Adjacent Scenery	2	2	0	No Impact
Explanation:	Views are moderately enhanced by low dark mountains in the background.	Distant mountains would remain visible. Solar arrays, fencing, gen-tie components, and other project components would not be visible this viewpoint, and would not block hills or mountains from view.		
Detail:	Visibility of hills and mountains impacts would occur.	would not be altered by project de	velopment. No	
Scarcity	2	2	0	No Impact
Explanation:	There are no particularly unique or unusual aspects in the view. Distant mountains add interest to the scene but are visible throughout the local area.	Views would not be modified by project operation.		
Detail:	Views of distant mountains are a KOP 4, and project development long views to in the local area. scarcity.	wailable in other locations and are would not substantially affect the Therefore, there would be no in	e not unique to availability of mpact to view	
Cultural Modifications	-1	-1	0	No Impact
Explanation:	Cultural modifications include agricultural uses, street signs as well as paved and dirt roads.	Solar arrays and associated structures would not be visible from KOP 4.		
Detail:	Cultural modifications include ag dirt roads. The project would components to the middle groun active agriculture. Solar arrays, components would attract atten However, these project component impacts associated with cultural	gricultural uses, street signs as well introduce solar development ad, but views would be shielded in the gen-tie line and structures and tion and create form, line, and of nts are not visible from this viewp modifications would occur.	l as paved and and ancillary by intervening 1 other project color contrast. oint. No visual	
Totals:	11	11	0	No Impact

### 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 12 feet in height or less. Therefore, solar panels would not block long-distance views and would be diminished when viewed from 0.5 miles or farther.
- Solar panels do not create significant levels of glare, as explained in Impact 4.1-4, below.
- Minimal onsite lighting would be required during operations, as explained in Impact 4.1-4. Facilities would not operate at night, and no regular nighttime staffing would be required.

#### Summary

As shown in Tables 4.1-4 through 4.1-7, 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 1 mile. 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 I-5. Even with distance and diminished visibility, the visual change associated with the introduction of approximately over 600 acres of solar development on currently undeveloped grassland terrain would likely attract attention. Further, the introduction of solar panels, a collector substation, the BESS, and the gen-tie line would increase the footprint of solar and electrical transmission development in the project area. More importantly, development of the project would expand existing industrial development (i.e., solar and wind developments) present in the San Joaquin Valley. Because solar and other renewable energy developments are not concentrated in the project the vicinity, the project would introduce manufactured elements where they do not currently dominate the landscape, resulting in significant aesthetic impacts.

Mitigation Measures MM 4.1-1 through MM 4.1-3 would be incorporated to reduce visual impacts that would occur from the collection of debris along the site boundary and would limit vegetation removal and would plant native vegetation. Native vegetation would be left in place around the project area where feasible, allowing for a natural screening of project components, the color treatment of the BESS structure 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 grassland landscape character of the project site, impacts to visual resources would remain significant and unavoidable.

### **Mitigation Measures**

**MM 4.1-1:** Prior to issuance of a grading or building permit, a Maintenance, Trash Abatement, and Pest Management Program shall be submitted for review and approval to the Kern County

Planning and Natural Resources Department. The program shall include, but not be limited to the following:

- a. The project proponent/operator shall clear debris from the project area at least four times per year; this can be done in conjunction with regular panel washing and site maintenance activities.
- b. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.
- c. The project proponent/operator shall implement a regular trash removal and recycling program on an ongoing basis during construction and operation of the project. Barriers to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.
- d. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.
- **MM 4.1-2:** 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 gen-tie poles, array facilities, etc. blend in with the colors found in the natural landscape. All color treatments shall result in matte or nonglossy finishes.
- **MM 4.1-3:** Wherever possible, within the project boundary the natural vegetation shall remain undisturbed unless mowing is necessary for placement of the project components. All natural vegetation adjacent to the project boundary shall remain in place as permitted by Fire Code. Prior to the commencement of project operations and decommissioning, the project proponent/operator shall submit a Landscape Revegetation and Restoration Plan for the project site to the Kern County Planning and Natural Resources Department for review and approval. The plan shall include the measures detailed below.
  - a. In areas temporarily disturbed during construction and decommissioning (including grading or removal of root balls resulting in loose soil), the ground surface shall be revegetated with a native seed mix or native plants and/or allowed to re-vegetate with the existing native seed bank in the top soil where possible to establish revegetation. Areas that contain permanent features such as perimeter roads, maintenance roads or under arrays do not require revegetation.
  - b. The plan must include but is not limited to: (1) the approved California native seed mix that will be used onsite, (2) a timeline for seeding the site, (3) the details of which areas are to be revegetated, (4) a list of the consultation efforts completed, (5) the methods and schedule for installation of fencing that complies with wildlife agency regulations, and (6) 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 threeyear period following restoration activities that occur post-construction and postdecommissioning. Based on annual monitoring visits during these three-year periods, an annual evaluation report shall be submitted to the Kern County Planning and Natural Resources Department for the three-year period. Should efforts to revegetate with the existing native seed bank in the top soil prove in the second year to not be successful by 75 percent cover rate, re-evaluation of revegetation methods shall be made in consultation with the Kern County Planning and Natural Resources Department and an additional year shall be added to the monitoring program to ensure coverage is achieved. The three-year monitoring program is intended to ensure the site naturally achieves native plant diversity, establishes perennials, and is consistent with conditions prior to implementation of the project, where feasible.

### Level of Significance after Mitigation

Despite implementation of Mitigation Measures MM 4.1-1 through MM 4.1-3, 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 4.1-4, any nighttime construction would use lighting designed to provide the minimum illumination needed, thereby minimizing adverse impacts related to light trespass. As a result, construction of the project would result in less-than-significant impacts to nighttime views.

#### Glare

Most of the proposed construction activities are planned to occur during daylight hours. Increased truck traffic and the transport of the solar arrays and construction materials to the project site and transmission lines would temporarily increase glare conditions during construction. However, this increase in glare would be minimal and temporary. Construction activity would occur on focused areas of the project site as construction progresses and any sources of glare would not be stationary for a prolonged period of time. Additionally, the surface area of construction equipment would be minimal compared to the scale of the site. Therefore, construction of the project would not create a new source of substantial glare that would affect daytime views in the area and impacts would be less than significant.

## Operation

### Lighting

As described in Chapter 3, *Project Description*, the only lighting that would be installed on the project site would be at the substation for security and use at times when nighttime repair activities may be required. 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 4.1-4, 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 4.1-4 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 by produced by sunlight reflecting off the glass surfaces of the solar modules, that would be installed under the project. 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 further reduce glare potential, the project would be required to implement Mitigation Measures MM 4.1-5 and MM 4.1-6, which require the use of non-reflective and non-glare materials when feasible. With implementation of these mitigation measures, impacts would be less than significant.

#### Mitigation Measures

- **MM 4.1-4:** 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 4.1-5:** Prior to the issuance of building permits, the project proponent shall demonstrate the solar panels and hardware are designed to minimize glare and spectral highlighting. Emerging technologies shall be used, such as diffusion coatings and nanotechnological innovations, to effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient with respect to converting incident sunlight into electrical power while also reducing the amount of glare generated by the panels. Specifications of such designs shall be submitted to the Kern County Planning and Natural Resources Department.
- **MM 4.1-6:** 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 4.1-4 through MM 4.1-6, impacts would be less than significant.

# **Cumulative Setting Impacts and Mitigation Measures**

As shown in Chapter 3, *Project Description*, Table 3-3, *Cumulative Project List*, there are two cumulative projects in the vicinity of the project site, including a surface mining expansion project, located approximately 0.75 miles east of the project site, and the Grapevine Specific and Community Plan, the closest portion of which is located approximately 0.85 miles south of the project site. These have the potential to result in cumulative impacts to aesthetics when considered together with the project. The "scarcity" rating criterion is likely to be impacted by widespread development in the area, as unobstructed views of regional topographical features and undeveloped lands would be less available as acreage is developed.

As discussed above, the project would have less than significant impacts as it relates to scenic vistas as project distance, topography, and intervening development would reduce the visual prominence of the proposed solar development to persons traveling in passenger vehicles on adjacent roads. As such, cumulative impacts would be less than significant and not cumulative considerable.

With regard to impacts related to damaging scenic resources within a scenic highway, the project would not be visible from any Officially Designated State or County Scenic Highway as there are no Officially Designated State or County Scenic Highways in the vicinity of the project site. The closest section of highways eligible for a State scenic highway designation is SR-58 and SR-14. The project is located approximately 50 miles west of these Eligible State Scenic Highways and is separated from these highways by the Tehachapi Mountains. As such, cumulative impacts would be less than significant and not cumulatively considerable.

visual change would be evident from I-5. Even with distance and diminished visibility, the visual change associated with the introduction of approximately over 600 acres of solar development on currently undeveloped grassland terrain would likely attract attention. Further, the introduction of solar panels, a collector substation, the BESS, and the gen-tie line would increase the footprint of solar and electrical transmission development in the project area. More importantly, development of the project would expand existing industrial development (i.e., solar developments) present in the San Joaquin Valley. Because solar and other renewable energy developments are not concentrated in the project vicinity, the project would introduce manufactured elements where they do not currently dominate the landscape, resulting in significant aesthetic impacts.

Cumulative development includes a substantial amount of housing development as part of the Grapevine Specific and Community Plan. This substantial increase in development will alter the visual character of the area. While other projects in the region would also be required to implement various mitigation measures to reduce impacts associated with visual character, the conversion of land in a presently rural area to solar energy production, mining, commercial and residential uses cannot be mitigated to a degree that impacts are no longer significant. Development of the project would result in significant impacts associated with visual character in the area. Even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-3, the project's contribution to significant cumulative impacts associated with visual character in the southern San Joaquin Valley would be significant and unavoidable.

The cumulative study area for lighting and glare impacts includes the areas in the immediate vicinity of the project site and offsite roadways that could experience light spillover and glare effects. The development under Grapevine Specific and Community Plan, located approximately 0.85 miles south of the project site, could contribute to cumulative lighting and glare impacts. Cumulative projects in the area would be required to adhere to existing regulations pertinent to lighting and would be required to implement various mitigation measures to reduce lighting and glare impacts to less than significant. The project would result in less-than-significant impacts to related to light and glare with the implementation of Mitigation Measures MM 4.1-4 through MM 4.1-6. Therefore, these impacts would not have a cumulatively considerable contribution to lighting and glare impacts. Cumulative impacts than significant.

## **Mitigation Measures**

Implementation of Mitigation Measures MM 4.1-1 through MM 4.1-6.

# Level of Significance after Mitigation

Despite implementation of Mitigation Measures MM 4.1-1 through MM 4.1-6, cumulative impacts related to visual character would be significant and unavoidable. Cumulative impacts related to scenic vistas, scenic resources, and light and glare would be less than significant.

This page intentionally left blank

# 4.2.1 Introduction

This section of the EIR describes the affected environment and regulatory settings for agriculture and forestry resources for the project. It also describes the impacts on agricultural and forest resources that would result from the implementation of the project, and includes mitigation measures that would reduce these impacts, where applicable. This section is based, in part, on information provided in the *Kern County Agricultural Crop Report* (2018) prepared by the Department of Agriculture and Measurement Standards along with the *Phase I Environmental Site Assessment and Limited Soil Sampling Report* (SCS Engineers, 2019) prepared for the project and provided in Appendix J 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 2018 Kern County Agricultural Crop Report, agriculture in Kern County was worth approximately \$7.4 billion in 2018, which is an increase of 3 percent from the 2017 crop value. The top five commodities for 2018 were grapes, almonds, citrus, milk, and pistachios, which made up more than \$4.4 billion (59 percent) of the total value, with the top twenty commodities making up more than 71 percent of the total value (California Department of Agriculture and Measurement Standards, 2018).

Kern County is a growing population and like many agricultural based jurisdictions, must balance urbanization and the loss of farmland. As shown in **Table 4.2-1**, *Agricultural Land Use Designation Conversions in 2018*, approved amendments re-designated 133.18 acres of agriculturally designated lands for non-agricultural uses. As discussed in Chapter 11.0 Agricultural Land Conversion, of the Kern County General Plans and Housing Element Annual Progress Report (January 1, 2018, to December 31, 2018), amendments resulted in a total net conversion of 133.18 acres within unincorporated Kern County. (Note: These various farmland designations are defined in Section 4.2.3, *Regulatory Setting*, below).

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)					-133.18
SOURCE: Kern County General Plans and Housing Element Annual Progress Report (January 1, 2018 to December 31, 2018), 2019.					

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

According to Kern Economic Development Corporation (KEDC), it is estimated that the total population of Kern County will reach approximately 1,240,496 individuals in 2040 (KEDC, 2019), growing from today's population of approximately 905,801 (DOF, 2018). The anticipated growth in population will most likely decrease the amount of agricultural land in Kern County even further. However, it is important to note that the conversion of agricultural land is affected by numerous factors other than population growth and urban development. Actual production is dependent on commodity prices, water prices and supply, labor, the proximity of processing and distribution facilities, and pest management. Factors such as weather, trade agreements, and labor disputes can also affect decisions regarding what crops are grown and which lands go in and out of production. Most conversion of Prime or Farmland of Statewide Importance agricultural lands is occurring within the planned development footprint of Metropolitan Bakersfield. Very little conversion of the most productive agricultural lands has occurred in outlying areas of the County.

# **Local Setting**

The project site is located in the southwestern portion of Kern County. The nearest populated areas to the project site are the unincorporated communities of Grapevine, Wheeler Ridge, and Lebec, which are located approximately 3 miles west, 5 miles northwest, 9 miles northwest, and 5 miles southwest of the project site, respectively. The City of Bakersfield is located about 25 miles north of the project site. The nearest residence is about 2.5 miles to the northwest. The project site is on approximately 650 acres of privately owned land in unincorporated portions of Kern County. The project site consists of four quarter-section parcels of land bisected by an existing, south-to-north agricultural haul road, referred to as the eastern parcels and western parcels. The eastern parcels encompass approximately 323 acres and the western parcels comprise approximately 324 acres. The project is located in a sparsely undeveloped, non-urbanized area of Kern County.

Land uses in the region consist largely of agriculture with a mix of row crops and grazing land. Current use of the site is primarily for grazing; farming has not occurred on the project site within the past 10 years. In addition, based on review of historical aerial photographs, the presence of row crops was observed in 1985 (SCS Engineers, 2019). The project site is bordered immediately to the west and south by vineyards and grazing land. While the eastern border is also adjacent to grazing lands, the Pastoria Creek stream channel and Cattle Creek traverses this area. The northern border of the project site is directly adjacent to the Tejon Oil Field.

# **Project Site Designation**

The project site is located within the administrative boundaries of the Kern County General Plan. As previously described in detail in Chapter 3, *Project Description*, the project site is primarily designated for agricultural uses as well as mineral and petroleum extraction uses on a portion of the western project site, see Chapter 3, Figure 3-7, *Existing General Plan & Land Use Designations*. Additionally, the entire project is zoned agriculture, as specified in Chapter 3, Table 3-2, *Project Site and Surrounding Land Uses and Zoning Classifications*, and as shown in Chapter 3, Figure 3-9, *Existing Zoning*.

The project site is also included within Kern County Agricultural Preserve Number 19, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture). According to the Kern County Zoning Ordinance, a commercial solar facility is a compatible use in the A district. Pursuant to Kern County Zoning Ordinance, Chapter 19.12.030.G, the construction and operation of a solar energy generating facility and battery energy storage system (BESS) on the site would require the approval of a Conditional

Use Permit(s) (CUP). As shown in **Figure 4.2-1**, *Farmland Mapping and Monitoring Program Designations*, the project site is not designated as "Prime Farmland," "Unique Farmland," and "Farmland of Statewide Importance" (DOC, 2017). All four parcels are designated as "Grazing Land" by the Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) 2016 Important Farmland Map. Surrounding properties are designated as either: (a) "Nonagricultural and Natural Vegetation," (b) "Prime Farmland," (c) "Farmland of Statewide Importance," or (d) "Unique Farmland" (DOC, 2018).

## Williamson Act Land Use Contracts

The administration of the local Williamson Act program for the County, including all necessary policies and procedures, is initiated, developed and amended by the Kern County Board of Supervisors upon the recommendation of the Planning Director as the Administrator of the program. Property subject to a Williamson Act Contract must have a General Plan resource designation (i.e., 8.1, 8.2, 8.3, 8.5), be within the boundaries of an established Agricultural Preserve, have a zoning of A (Exclusive Agriculture), and have an established qualifying agricultural use.

As shown in Chapter 3, *Project Description*, Figure 3-4, *Williamson Act Land Use Contract Cancellation*, of this EIR, the project site is currently subject to an existing Williamson Act Land Use contract filed for non-renewal in 2014 and set to expire in 2023. Therefore, the entire area where the solar PV electrical energy generating facility, the BESS, and associated infrastructure would be installed is within area covered by a ten year Williamson Act Contract and the project would require a Williamson Act Land Use Contract Cancellation to facilitate development of the project.

# 4.2.3 Regulatory Setting

# Federal

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

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

In 1981, Congress passed the Agriculture and Food Act (Public Law 97-98) which contained the FPPA, Subtitle I of Title XV, Sections 1539–1549. The final rules and regulations were published in the Federal Register on June 17, 1994. Federal agencies are required to develop and review their policies and procedures related to implementing the FPPA every 2 years.

The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or rely on assistance from a federal agency (Natural Resources Conservation Service [NRCS], 2019).



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.2-1: FARMLAND MAPPING AND MONITORING PROGRAM DESIGNATIONS

# 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 project site is not designated as "Nonagricultural and Natural Vegetation"; "Prime Farmland"; "Farmland of Statewide Importance"; or "Unique Farmland". The DOC FMMP designates the project site as "Grazing Land" (DOC, 2017).

The list below describes the categories mapped by the DOC (DOC, 2017) through the FMMP. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to as "farmland."

- **Prime Farmland.** Farmland that has the ideal combination of physical and chemical features. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields and long-term agricultural production Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland that is similar to Prime Farmland but with minor shortcomings, such as greater slopes or lower moisture content. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Unique Farmland. Land with lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include land that supports non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been used for crops at some time during the four years prior to the mapping date.
- **Farmland of Local Importance.** Land that is important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups with an interest in grazing activities.
- Urban and Built-Up Land. Land that is developed with structures that have been built to a density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land supports residential, industrial, commercial, institutional, public administrative uses; railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment facilities; water control structures; and other developed uses.
- Other Land. Land not included in any other mapping category. Common examples include lowdensity rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Undeveloped and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

## **California Land Conservation Act (Williamson Act)**

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act (California Government Code Sections 51200–51297.4), is applicable to specific parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under a Williamson Act Contract. The Williamson Act program is administered by the DOC, in conjunction with local governments that administer the individual contract arrangements with landowners. Participation in the Williamson Act program is dependent on County adoption and implementation of the program and is voluntary for landowners (DOC, 2019a).

Under the Williamson Act, a landowner commits the parcel to a 10-year period, during which time no conversion out of agricultural or open space 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, 2019a).

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.

A Williamson Act Contract cancellation is an option under limited circumstances and conditions set forth in Government Code Section 51280 et seq. In such cases, landowners may petition a board/council for Williamson Act Contract cancellation. The board/council may grant tentative cancellation only if it makes required statutory findings (Government Code Section 51282(a)). If the required findings are met, the
landowner is required to pay a cancellation fee equal to 12.5 percent of the cancellation valuation (unrestricted fair market value) of the property (Government Code Section 51283(b)) (DOC, 2019b).

#### **California Government Code Section 51282**

California Government Code Section 51282 outlines the permitted reasoning for cancellation of Williamson Contracts below, under (a), (b), and (c).

- (a) The landowner may petition the board or council for cancellation of any contract as to all or any part of the subject land. The board or council may grant tentative approval for cancellation of a contract only if it makes one of the following findings:
  - (1) That the cancellation is consistent with the purposes of this chapter.
  - (2) That cancellation is in the public interest.
- (b) For purposes of paragraph (1) of subdivision (a) cancellation of a contract shall be consistent with the purposes of this chapter only if the board or council makes all of the following findings:
  - (1) That the cancellation is for land on which a notice of nonrenewal has been served pursuant to Section 51245.
  - (2) That cancellation is not likely to result in the removal of adjacent lands from agricultural use.
  - (3) That cancellation is for an alternative use which is consistent with the applicable provisions of the city or county general plan.
  - (4) That cancellation will not result in discontinuous patterns of urban development.
  - (5) That there is no proximate non-contracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or, that development of the contracted land would provide more contiguous patterns of urban development than development of proximate non-contracted land.
- (c) For purposes of paragraph (2) of subdivision (a) cancellation of a contract shall be in the public interest only if the council or board makes the following findings: (1) that other public concerns substantially outweigh the objectives of this chapter; and (2) that there is no proximate non-contracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate non-contracted land.

As used in this subdivision "proximate, non-contracted land" means land not restricted by contract pursuant to this chapter, which is sufficiently close to land which is so restricted that it can serve as a practical alternative for the use which is proposed for the restricted land.

As used in this subdivision "suitable" for the proposed use means that the salient features of the proposed use can be served by land not restricted by contract pursuant to this chapter. Such non-restricted land may be a single parcel or may be a combination of contiguous or discontinuous parcels.

#### Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act. It was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy in the State. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts". Under the provisions of this act, a landowner who is already under a Williamson Act Contract can apply

for Farmland Security Zone status by entering into a contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35 percent reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses.

#### Public Resources Code 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 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.

A majority of the project site is designated as 8.1 and 8.3. However, a portion of one of the west parcels (241-310-10) is designated as 8.4 Mineral and Petroleum.

• **8.4 Mineral and Petroleum (minimum parcel size 5 acres gross)** – Areas which contain producing or potentially productive petroleum fields, natural gas, and geothermal resources, and mineral deposits of regional and Statewide significance. Uses are limited to activities directly associated with the resource extraction. Minimum parcel size is five gross acres.

Uses shall include, but are not limited to, the following:

 Mineral and petroleum exploration and extraction, including aggregate extraction; extensive and intensive agriculture; mineral and petroleum processing (excluding petroleum refining); natural gas and geothermal resources; pipelines; power transmission facilities; communication facilities; equipment storage yards; and borrow pits.

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 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.

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

#### 1.9: Resource

#### Goals

- Goal 1: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.
- Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential for future use.
- Goal 3: Ensure the development of resource areas minimize effects on neighboring resource lands.
- Goal 5: Conserve prime agriculture lands from premature conversion.
- Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

#### Policies

- Policy 1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of general plan designation.
- Policy 5: Areas of low intensity agriculture use (Map Code 8.2 (Resource Reserve), Map Code 8.3 (Extensive Agriculture), Map Code 8.5 (Resource Management)) should be of an economically viable size in order to participate in the State Williamson Act Program/Farmland Security Zone Contract.

- 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.
- Policy 13: Any property in an Agriculture Preserve proposing to be subject to a Williamson Act Contract or Farmland Security Zone Contract must have a Resource designation.
- Policy 16: The County will encourage development of alternative energy sources by tailoring its Zoning and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines published by the California State Energy Commission.

#### Implementation Measures

- Measure B: Areas designated as Resource Reserve (Map Code 8.2), Extensive Agriculture (Map Code 8.3), Resource Management (Map Code 8.5) that are under Williamson Act Contracts or Farmland Security Zone Contracts will have a minimum parcel size of 80 acres until such time as a contract is expired or is cancelled, at which time the minimum parcel size will become 20 acres.
- 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.
- Measure G: Property placed under the Williamson Act/Farmland Security Zone Contract must be in a Resource designation.

## 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 Section 4.2.2, *Environmental Setting*, the Kern County Zoning Ordinance designates the entire project site for agricultural uses.

#### 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 the existing Williamson Act Contract. The proposed solar project is subject to these rules, as it is on contracted land, and would be required by Kern County to petition for an early cancellation of the contract.

## 4.2.4 Impacts and Mitigation Measures

## Methodology

The project's potential impacts on agriculture and forestry resources have been evaluated on a qualitative basis by reviewing the *Kern County Agricultural Crop Report* (2018) and the 2016 DOC Important Farmland Map. 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 *CEQA Guidelines* Appendix G, that a project would have a significant impact on agriculture and forestry resources if it would:

- a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;
- b. Conflict with existing zoning for agricultural use or Williamson Act Contract;
- c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
- d. Result in the loss of forestland or conversion of forest land to non-forest use.
- e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use; or
- f. Result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 acres or more (Public Resources Code Section 15206(b)(3)).

## **Project Impacts**

Impact 4.2-1: The project would Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.

The project site is undeveloped and is currently primarily used for grazing; farming has not occurred on the project site within the past 10 years. There is no designated Prime Farmland, Unique Farmland, or Farmland

of Statewide Importance within the project area. The DOC's FMMP 2017 Important Farmland Map, designates the project site as "Grazing Land." Surrounding properties are designated as either: (a) "Nonagricultural and Natural Vegetation"; (b) "Prime Farmland"; (c) "Farmland of Statewide Importance"; or (d) "Unique Farmland" (DOC, 2017). Although implementation of the project would preclude livestock grazing onsite, it would only result in loss of less than one percent of the grazing land within Kern County. Disturbance to the designated grazing land related to development of the project would be less than significant. Construction and/or operation of the project is not anticipated to result in the conversion of designated Farmland to a nonagricultural use as the site is FMMP designated as "Grazing Land." Therefore, impacts related to converting designated farmland to nonagricultural use would be less than significant.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

## Impact 4.2-2: The project would conflict with existing zoning for agricultural use or Williamson Act Contract.

The project site is located within the A (Exclusive Agriculture) Zone District. Pursuant to Sections 19.12.020 and 19.12.030 of Kern County Zoning Ordinance, construction and operation of solar facilities on areas zoned A (Exclusive Agriculture) require approval of a CUP. The Kern County General Plan encourages the development of alternative sources of energy, such as solar energy, while protecting the environment (see Section 4.11, *Land Use and Planning*, of this EIR, for additional goals and policies that promote solar energy development). Solar facilities are considered to be a compatible use and are permitted, with the approval of a CUP, on properties zoned for exclusive agricultural use, in accordance with Section 19.12.030 of the Kern County Zoning Ordinance. Therefore, with approval of a CUP, development of the proposed solar facility would be compatible with applicable land use policies and regulations and impacts would be less-than-significant related to conflicts with existing zoning for agricultural use.

As discussed in more detail under Section 4.2.3, *Regulatory Setting*, the principal purpose of the Williamson Act is to preserve agricultural lands from conversion to nonagricultural or incompatible uses. As shown in Chapter 3, *Project Description*, Figure 3-4, *Williamson Act Land Use Contract Cancellation*, of this EIR, all four parcels, totaling approximately 650 acres within the project boundary, are included in an existing Williamson Act Land Use Contract filed for non-renewal and set to expire in the year 2023. A commercial solar facility is not listed as a compatible use in the Williamson Act Standard Uniform Rules, as adopted by the Kern County Board of Supervisors; therefore, the project would not be consistent with the existing contract. However, the project proponent has petitioned for cancellation of the Williamson Act Contract, pursuant to California Government Code Section 51282(a)(1), which pertains to cancellation of a Williamson Act in the public interest. Cancellation of a Williamson Act Contract is an option under the limited circumstances and conditions as set forth in Government Code Section 51280 et seq. In such cases, landowners may petition the Kern County Board of Supervisors may grant a tentative cancellation only if it makes the required statutory findings (Government Code Section 51282(a)).

To determine whether the cancellation is in the public interest, the Kern County Board of Supervisors must find that (1) other public concerns substantially outweigh the objectives of the Williamson Act and (2) there is no proximate non-contracted land that is both available and suitable for the use or that development of the contracted land would provide more contiguous patterns of urban development (Government Code Section 51282(c)).

The public benefit of the project is related to energy supply, energy security, global climate change, and employment (i.e., an estimated peak of 400 construction jobs and one to two permanent jobs) as well as economic benefits within Kern County. Additionally, the project would help the State of California achieve its goal of obtaining 50 percent of all electricity sold in the state from renewable resources by December 31, 2026, 60 percent by December 31, 2030, and 100 percent by 2045. Furthermore, the project would generate renewable electrical power using solar PV panels, store solar energy in the BESS and connect to the electrical grid with minimum potential for air emissions and other environmental impacts and land use conflicts. Therefore, the benefits from cancellation of the Williamson Act Contract would substantially outweigh the objectives of the Williamson Act, and the finding set forth in Government Code Section 51282(c)(1) would be applicable.

The cancellation petition would be submitted to the DOC for review and concurrence regarding whether both of the aforementioned findings could be made by the Kern County Board of Supervisors. The Kern County Board of Supervisors would consider the project proponent's petition for cancellation of the Williamson Act Contract concurrent with the consideration of the necessary land use approvals, and review all information and data provided to determine if the two findings can be made and the cancellation can be granted.

As the project site is currently subject to a Williamson Act Contract, which is in non-renewal status and set to expire February 28, 2023, development of the project prior to expiration would conflict with the existing contract. However, the analysis above supports justification for cancellation of the contract based on the required public benefit findings. Should the Kern County Board of Supervisors determine that cancellation of the contract is in the public benefit (per Section 51282(a)), no conflict with Williamson Act contracted land would occur. With payment of the cancellation fee, as required by the Government Code, the Williamson Act Contract cancellation process would be complete and impacts associated with Williamson Act lands would be less than significant.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

# Impact 4.2-3: The project would conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).

As previously mentioned, the project site is entirely within the Exclusive Agriculture (A) Zone District, and is not zoned for forest land, timberland, or timberland production. The existing Kern County General Plan Land Use Designations include Map Codes 8.1/2.5 (Intensive Agriculture (Min 20 acres)/Flood Hazard), 8.3/2.5 (Extensive Agriculture (Min 20 acres)/Flood Hazard), and 8.4/2.5 (Mineral and Petroleum/Flood

Hazard). 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.

There is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project site, however, land in the vicinity of the site are designated as prime, unique, and of statewide importance. Development associated with the project would only occur within the project boundaries and, although the project may cause changes to the existing environment, there is no evidence that the project would affect agricultural land in the vicinity during operational activities. The development of a solar power and battery storage facility would not require additional restrictions and limitations on pesticides, fungicides, or herbicides for surrounding agricultural land uses. In addition, the project would not place additional restrictions on noise, burning, or dust generation on surrounding operations. No other changes would occur that would result in the conversion of farmland to a non-agricultural use. Construction of the project would not result in substantial long-term changes in air quality, interfere with irrigation, or affect agricultural production on adjacent land.

Operation and maintenance activities associated with PV solar power plants and BESS facilities are minimal compared with those of conventional fossil-fuel power plants. The PV modules, which would be non-reflective, would convert sunlight directly into electricity; therefore, they would consume no fossil fuels and emit no air pollutants during operations. Furthermore, development of the project would not result in any significant environmental impacts on adjacent properties as a result of the release of fuels, solvents, pesticides, or herbicides. Potential impacts from construction and operation activities that may result from the release of fuels, solvents, pesticides, or herbicides, or herbicides, or herbicides, as required by Mitigation Measure MM 4.9-1, and through regulation of the use of herbicides, as required by Mitigation Measure MM 4.9-3. Therefore, the project would not include activities that would restrict or impair agricultural production on adjacent or nearby land. Because the activities proposed on the sites are not anticipated to affect existing environmental conditions outside of the project boundary, the project is not expected to result in the conversion of farmland on adjacent or nearby properties to non-farmland uses. Additionally, with implementation of Mitigation Measure MM 4.9-1 and MM 4.9-3, impacts would be less than significant.

As discussed above, 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 designated 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 would be no impact.

#### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.9-1 and MM 4.9-3 would be required (see Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1 and MM 4.9-3, 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)).

As stated above, the project would result in the cancellation of a Williamson Act Contract, in non-renewal status, on four parcels totaling approximately 650 acres. As described above, the project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; agricultural production has not taken place on the project site in the last 10 years. As discussed in more detail under Section 4.2.3, *Regulatory Setting*, the principal purpose of the Williamson Act is to preserve agricultural and open space lands from conversion to nonagricultural or incompatible uses. A commercial solar facility is not listed as a compatible use in the Williamson Act Standard Uniform Rules, as adopted by the Kern County Board of Supervisors; therefore, the project would not be consistent with the existing contract. The existing Williamson Act Contract on the project site parcels were filed for non-renewal in 2014 and are set to expire in 2023. The project proponent has petitioned for cancellation of the Williamson Act Contract,

pursuant to California Government Code Section 51282(a)(1), which pertains to cancellation of a Williamson Act in the public interest. Cancellation of a Williamson Act Contract is an option under the limited circumstances and conditions as set forth in Government Code Section 51280 et seq. In such cases, landowners may petition the Kern County Board of Supervisors for cancellation of a Williamson Act Contract. The Kern County Board of Supervisors may grant a tentative cancellation only if it makes the required statutory findings (Government Code Section 51282(a)).

As analyzed further under Impact 4.2-2, the benefits from cancellation of the Williamson Act Contract would substantially outweigh the objectives of the Williamson Act, and the finding set forth in Government Code Section 51282(c)(1) would be applicable. Upon approval of the CUP No. 9, Map 219 and Williamson Act Land Use Contract Cancellation 19-02, construction of the project would not conflict with the Williamson Act Contract that the project site is currently subject to. The cancellation petition would be submitted to the DOC for review and concurrence regarding whether both of the aforementioned findings could be made by the Kern County Board of Supervisors. The Kern County Board of Supervisors would consider the project proponent's petition for cancellation of the Williamson Act Contract concurrent with the consideration of the necessary land use approvals, and review all information and data provided to determine if the two findings can be made and the cancellation can be granted.

As the project site is currently subject to a Williamson Act Contract, which is in non-renewal status and set to expire February 28, 2023, development of the project prior to expiration would conflict with the contract, which, as noted above, was made to restrict the project site to agricultural and compatible uses. Therefore, the project would require the cancellation of an open space contract made pursuant to the California Lands Conservation Act of 1965 for a parcel over 100 acres. No feasible mitigation is available to reduce impacts related to the cancellation of Williamson Act Contracts, therefore, impacts related to the cancellation of an open space contract would be significant and unavoidable.

The project site is not subject to a Farmland Security Zone Contract and, therefore, no impacts related to cancellation of a Farmland Security Zone contract are anticipated.

#### **Mitigation Measures**

No feasible mitigation is available.

#### Level of Significance

As there is no feasible mitigation available to reduce impacts related to the cancellation of a Williamson Act Contract, impacts would be significant and unavoidable.

## **Cumulative Setting, Impacts, and Mitigation Measures**

The geographic scope for cumulative agricultural and forest impacts is considered the Southern San Joaquin Valley. This geographic scope was selected because of its relatively uniform terrain, soil conditions, climate, and habitat value; its low population and development density; and the region's common groundwater basin and water supply considerations. As shown in Chapter 3, *Project Description*, Figure 3-10, *Cumulative Projects Map*, and illustrated in Chapter 3, *Project Description*, Table 3-3, *Cumulative Projects List*, of this EIR, there are approximately two cumulative projects in the vicinity of the project site, including a surface mining expansion project, located approximately 0.75 miles east of the project site, and the Grapevine Specific & Community Plan, the closest portion of which is located

approximately 0.85 miles south of the project site. The Grapevine Specific & Community Plan would be located in grazing land and Prime Farmland, Unique Farmland, and Farmland of Statewide Importance and may contribute to a loss of farmland.

As previously discussed, construction and operation of the project is not anticipated to result in the conversion of designated Farmland to a nonagricultural use as the site is FMMP designated as "Grazing Land". However, the project would convert approximately 650 acres of agricultural land to non-agricultural uses. While development of the Grapevine Specific & Community Plan would result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), the project's contribution to the conversion of agricultural land to non-agricultural uses would be cumulatively considerable. The project's incremental effect is cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus cumulative impacts would be significant and unavoidable.

While the project would conflict with a Williamson Act Contract if construction were to occur prior to expiration of the existing contract, with approval of a CUP pursuant to Section 19.12.030 of the Kern County Zoning Ordinance, and if the Kern County Board of Supervisors determines that cancellation of the contract is in the public interest, there will be no conflict with the existing agricultural zoning or Williamson Act–contracted land. Cumulative projects, including the Grapevine Specific & Community Plan, which are subject to Williamson Act Contracts in non-renewal status, would not be developed until the existing Williamson Act Contracts expire and similarly would not result in any conflicts with existing agricultural zoning or adjacent Williamson Act-contracted land. Cumulative impacts would be less than significant. As discussed above, the project site is not zoned for forest land, timberland, or timberland production. As such, the project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland or timberland or conversion of forest land to non-forest use. Cumulative projects in the vicinity of the project site are also not located on land zoned for forest land, timberland production. No cumulative impacts would occur.

As analyzed above, operation of the solar facility on the project site would not preclude the conversion of surrounding areas to agricultural uses. Further, the project site could be used for agricultural uses following project decommissioning. Therefore, the project would not 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. While development of the Grapevine Specific & Community Plan would result in conversion of conversion of Farmland to nonagricultural uses, the project's contribution would not be cumulatively considerable. Cumulative impacts would be less than significant.

As it relates to 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 Williamson Act Contract for the project site was made to restrict the project site to agricultural and compatible uses on approximately 650 acres. In addition, as described above, the project is seeking approval of a CUP and Williamson Act Land Use Contract Cancellation, which would tentatively cancel the Williamson Act Contract that the project site is currently subject to. Therefore, based on the above, the project would result in a significant impact involving the cancellation of an open space contract. Cumulative projects, including the Grapevine Specific & Community Plan, which are subject to Williamson Act Contracts in non-renewal status, would similarly result in conflicts related to cancellation of an open space contract or a Farmland Security Zone contract. As explained above under Impact 4.2-6, no feasible mitigation is available to reduce impacts related to the cancellation of Williamson Act Contracts. The project's incremental effect is cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus cumulative impacts would be significant and unavoidable.

### **Mitigation Measures**

No feasible mitigation is available.

## Level of Significance

As there is no feasible mitigation available to reduce impacts related to the cancellation of a Williamson Act Contract, cumulative impacts would be significant and unavoidable.

## 4.3.1 Introduction

This section of the EIR describes the affected environment and regulatory setting of air quality for the project. This section also evaluates the short- and long-term air quality impacts associated with development of the project and, where necessary, mitigation measures are provided to avoid or lessen the impacts of the project.

Information in this section is based primarily on the *Air Quality and Greenhouse Gases Study for the Pastoria Solar Project, Kern County, California* (Air Quality and GHG Technical Report) (Jacobs, 2019), which was prepared by Jacobs Engineering Group, located in Appendix B of this EIR and incorporated by reference herein. The report was prepared in accordance with the Kern County Planning Department's Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports and San Joaquin Valley Air Pollution Control District (SJVAPCD)'s 2015 Guidance for Assessing the Mitigation Air Quality Impacts (SJVAPCD, 2015).

## 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 Kern County portion of the San Joaquin Valley Air Basin and is under the jurisdiction of SJVAPCD. The San Joaquin Valley Air Basin includes the western half of Kern County. The San Joaquin Valley Air Basin is separated from the Mojave Desert Air Basin to the southeast by the Tehachapi Mountains and the south end of the Sierra Nevada Mountains. The project site is located in unincorporated Kern County, approximately 3 miles west of the community of Grapevine, CA.

## **Topography and Meteorology**

Air pollution, especially the dispersion of air pollutants, is directly related to a region's topographic features. Air quality is a function of both the rate and location of pollutant emissions and the meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects ambient air quality.

The project site is located in unincorporated south-eastern Kern County, in central California. The nearest populated areas to the project site are the unincorporated communities of Grapevine, Wheeler Ridge, Mettler, and Lebec, which are located approximately 3 miles west, 5 miles northwest, 9 miles northwest, and 5 miles southwest of the project site, respectively. The City of Bakersfield, located approximately 25 miles to the north, is the nearest metropolitan area in relation to the project site. The project site can be reached by traveling from Interstate 5 east along Edmonston Pumping Plant Road for approximately 4 miles then turning north onto an existing agricultural haul road, for approximately 0.7 miles. The topography of the project area is relatively flat; however, the foothills at the base of the Tehachapi Mountain Range are approximately 1 mile south of the project site.

The southeastern Kern County is predominately affected by the San Joaquin Valley, which is considered to be a Mediterranean climate area. Mediterranean climate zones are characterized by sparse rainfall, which occurs mainly in winter, and hot dry summers (SJVAPCD, 2015). The San Joaquin Valley Air Basin in particular is characterized by hot, dry summers and cool, rainy winters. The climate is a result of the topography and the strength and location of a semi-permanent, subtropical high-pressure cell.

Winds in south-eastern Kern County typically blow from the northwest. The region's topographic features restrict air movement and channel the air mass towards the southeastern end of the San Joaquin Valley, where the project is located (SJVAPCD, 2015). This effect moderates air temperatures in the region, with average minimum winter temperatures ranging from the low 40s degrees Fahrenheit (°F) to the mid-40s°F and average maximum summer temperatures ranging from the low 90s°F to 100°F (Western Regional Climate Center [WRCC], 2019). Wind speeds are moderate in this region, with annual average wind speeds of approximately 6 miles per hour (Weather Underground, 2017).

The subtropical high-pressure cell is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the San Joaquin Valley. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface. Any emissions of pollutants can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500 to 3,000 feet). Winter-time high-pressure events can often last many weeks with surface temperatures often lowering into the 30s°F. During these events, fog can be present and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few hundred feet (SJVAPCD, 2015).

## **Sensitive Receptors**

Sensitive receptors are land uses or people considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Residences, schools, hospitals, convalescent homes, and parks are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The project is located on an approximately 650-acre site in unincorporated Kern County, in the southern portion of the San Joaquin Valley, and is zoned for agricultural uses. Land uses in the region consist largely of agriculture with a mix of row crops and grazing land. While there are no existing sensitive receptors in the vicinity of the project site, for purposes of this analysis, the proposed residential dwelling units for the Grapevine Specific and Community Plan (Cumulative Project No. 1) would be considered sensitive receptors. The nearest portion of the site for the Grapevine Specific and Community Plan is located approximately 0.85 miles south of the project site.

## **Ambient Air Quality Standards**

#### National and State Ambient Air Quality Standards

Regulation of air pollution is achieved through both federal and state ambient air quality standards and permitted emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the United States Environmental Protection Agency (USEPA) has identified criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM) (specifically PM<sub>10</sub> and PM<sub>2.5</sub>), and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

To protect human health and the environment, USEPA has set "primary" and "secondary" ambient standards for each of the criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors, such as children, the elderly, and individuals suffering from chronic lung conditions, such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

#### **Regional and Local Standards**

NAAQS establish the level for an air pollutant above which detrimental effects to public health or welfare may result. NAAQS are defined as the maximum acceptable concentrations that, depending on the pollutant, may not be equaled or exceeded more than once per year or in some cases as a percentile of observations. California has generally adopted more stringent ambient air quality standards for the criteria air pollutants (i.e., California Ambient Air Quality Standards [CAAQS]). California has also established CAAQS for sulfates, hydrogen sulfide, and vinyl chloride; however, air emissions of these pollutants are not expected to occur under the project and, thus, these pollutants are not addressed further in this EIR.

**Table 4.3-1**, *National and State Criteria Pollutant Standards and San Joaquin Valley Air Pollution Control District Attainment Status*, presents both sets of ambient air quality standards (i.e., national and state) as well as attainment status for each of these standards within the SJVAPCD jurisdiction. If a pollutant concentration in an area is lower than the established standard, the area is classified as being in "attainment" for that pollutant. If the pollutant concentration meets or exceeds the standard (depending on the specific standard for the individual pollutants), the area is classified as a "nonattainment" area. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified."

As shown in Table 4.3-1, the state attainment status for the project area, located in Kern County, is currently nonattainment/severe for 1-hour ozone standards, nonattainment for 8-hour ozone standards, nonattainment for 24-hour and annual arithmetic mean for  $PM_{10}$  standards, and nonattainment for annual arithmetic mean for  $PM_{2.5}$  standards. The national attainment status for the project area is currently nonattainment/extreme for 8-hour ozone standards and nonattainment for 24-hour and annual arithmetic mean for  $PM_{2.5}$  standards. State and nonattainment for 24-hour and annual arithmetic mean for  $PM_{2.5}$  standards and nonattainment for 24-hour and annual arithmetic mean for  $PM_{2.5}$  standards. State and national standards of all of the other criteria pollutants are classified as attainment and/or unclassified (SJVAPCD, 2020; SJVAPCD, 2018).

	Averaging Period	California Standards		National Standards	
Pollutant		Concentration	Attainment Status	Primary	Attainment Status
Ozone (O <sub>3</sub> )	1-hour	0.09 ppm	Nonattainment/Severe	—	—
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment/Extreme
Particulate Matter (PM <sub>10</sub> )	AAM	$20 \ \mu g/m^3$	Nonattainment	—	_
	24-hour	50 µg/m <sup>3</sup>	Nonattainment	150 μg/m <sup>3</sup>	Attainment
Fine Particulate Matter (PM <sub>2.5</sub> )	AAM	$12 \ \mu g/m^3$	Nonattainment	$12.0 \ \mu\text{g/m}^3$	Nonattainment
	24-hour	—	_	$35 \ \mu g/m^3$	Nonattainment
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment	35 ppm	Attainment
	8-hour	9.0 ppm	-	9 ppm	-
Nitrogen Dioxide (NO <sub>2</sub> )	AAM	0.030 ppm	Attainment	0.053 ppm	Attainment
	1-hour	0.18 ppm	Attainment	0.100 ppm	Attainment
Sulfur Dioxide (SO <sub>2</sub> )	AAM			0.030 ppm	Attainment
	24-hour	0.04 ppm	Attainment	_	_
	3-hour			0.5 ppm	Attainment
	1-hour	0.25 ppm	Attainment	0.075 ppm	Unclassified
Lead	30-day average	$1.5 \ \mu g/m^3$	Attainment		_
	Calendar quarter	_	_	1.5 μg/m <sup>3</sup>	Attainment
	Rolling 3-month average	_	_	0.15 μg/m <sup>3</sup>	Attainment
Sulfates	24-hour	25 μg/m <sup>3</sup>	Attainment		No
Hydrogen Sulfide	1-hour	0.03 ppm (42 μg/m <sup>3</sup> )	Unclassified	Federal Standards	
Vinyl Chloride	24-hour	0.01 ppm (42 μg/m <sup>3</sup> )	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		
NOTES:					

## TABLE 4.3-1:STATE AND NATIONAL CRITERIA POLLUTANT STANDARDS AND SJVAPCDATTAINMENT STATUS

AAM = annual arithmetic mean; ppm = parts per million;  $\mu g/m^3$  = micrograms per cubic meter SOURCE: SJVAPCD, 2020; SJVAPCD, 2018.

#### Local Air Quality

To assess localized air quality impacts, the CO significance thresholds are based on the state CO standards, shown previously in Table 4.3-1, which are 20 parts per million (ppm) for 1-hour CO concentration levels and 9 ppm for 8-hour CO concentration levels. If CO concentration levels with the project would be less than the standards, then there would be no significant impact on local air quality. If future CO concentrations with the project would be above the standards, then the increase due to the project would determine if the impact would be significant or less than significant. A project would have a significant impact on local air quality if the project would result in an increase of 1 ppm or more for the 1-hour averaging time or 0.45 ppm or more for the 8-hour averaging time.

#### **Ambient Air Monitoring**

CARB has established and maintains a network of sampling stations (called the State and Local Air Monitoring Stations [SLAMS] network) that work in conjunction with local air pollution control districts and air quality management districts to monitor ambient pollutant levels. The SLAMS network in Kern County consists of ten 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 primary pollutants of concern in the project area are ozone, PM<sub>10</sub>, and PM<sub>2.5</sub> because the San Joaquin Valley is designated nonattainment for these pollutants by the USEPA and/or CARB. Ten ambient air monitoring stations operate in Kern County, eight of which are in the valley portion of Kern County and two of which are in the desert portion of Kern County. Air quality data statistics from the Bakersfield-California Avenue ambient air monitoring station were used as representative of the project area's environmental setting due to the proximity of the monitoring station to the project (approximately 30 miles away). Ambient monitoring data obtained for 2016 through 2018 is summarized below in **Table 4.3-2**, *Air Quality Data Summary (2016–2018)*.

	Monitoring Year					
Pollutant	2016	2017	2018			
Ozone (O <sub>3</sub> )						
Maximum concentration (1-hour/8-hour average)	0.092/0.085	0.122/0.104	0.107/0.98			
Number of days state/national 1-hour standard exceeded	0/0	11/0	8/0			
Number of days national 8-hour standard exceeded	60	85	60			
Suspended Particulate Matter (PM <sub>2.5</sub> )						
Maximum concentration (24-hour)	66.4	101.8	98.5			
Annual Average (national/state)	14.7/16	15.9/15.9	17.6/15.7			
Number of days national standard exceeded (measured/calculated)	25.5	30.2	40.3			
Suspended Particulate Matter (PM <sub>10</sub> )						
Maximum concentration (24-hour) (national/state)	90.9/92.2	138.0/143.6	136.0/142.0			
Annual Average (national/state)	41.2/40.9	42.6/42.6	42.1/-			
Number of days state standard exceeded (measured/calculated)	99	0/0	121			
Number of days national standard exceeded (measured/calculated)	0	0	0			
NOTES:						
ppm = parts per million by volume: ug/m3 = micrograms per cubic meter: NA=Not Available						

#### TABLE 4.3-2: AIR QUALITY DATA SUMMARY (2016–2018)

SOURCE: CARB, 2019.

## **Criteria Air Pollutants**

The following is a general description of the source and health effects from the government regulated criteria air pollutants of ozone (O<sub>3</sub>); reactive organic gasses (ROGs) and volatile organic compounds (VOCs), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM) (specifically PM<sub>10</sub> and PM<sub>2.5</sub>), sulfates, and lead (Pb).

#### Ozone (O₃)

Ozone  $(O_3)$  occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. At ground level, tropospheric, or "bad," ozone is an air pollutant that damages human health, vegetation, and many common materials. Ozone is a key ingredient of urban smog. The troposphere extends to a level approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric, or "good," ozone layer extends upward from approximately 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays (UV-B).

"Bad" ozone is what is known as a photochemical pollutant, which needs the combination of reactive organic gas (ROG) and oxides of nitrogen (NO<sub>X</sub>), in the presence of sunlight to form. ROG and NO<sub>X</sub> 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<sub>X</sub> and ROG. Sources of precursor gases number in the thousands and include common sources such as consumer products, gasoline vapors, chemical solvents, and combustion byproducts of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. Thus, high ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

#### **Health Effects**

While ozone in the upper atmosphere protects the earth from UV-B, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular diseases, are aggravated by exposure to high ozone levels.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation, lung tissue damage, and a reduction in the amount of air inhaled into the lungs. Health effects include potential increased susceptibility to respiratory infections and reduced ability to exercise. Health effects are more severe in people with asthma and other respiratory ailments. People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. Also, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures. Elevated ozone concentrations also reduce crop and timber yields, damage native plants, and damage materials such as rubber, paints, fabric, and plastics (CARB and American Lung Association of California, 2007).

#### Reactive Organic Gases (ROGs) and Volatile Organic Compounds (VOCs)

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including ROGs and VOCs, which include all hydrocarbons, except those exempted by CARB. Therefore, ROGs are a set of organic gases based on state rules and regulations. VOCs are similar to ROGs in that they include all organic gases, except those exempted by Federal law. Both VOCs and ROGs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

#### **Health Effects**

The primary health effects of hydrocarbons result from the formation of ozone and its related health effects (see the ozone health effects discussion above). High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate federal or California ambient air quality standards for ROG. Carcinogenic forms of ROG are considered toxic air contaminants (TACs). An example is benzene, which is a carcinogen. The health effects of individual ROGs are described under the "Toxic Air Contaminants" heading below.

#### Carbon Monoxide (CO)

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, which contributes more than 66 percent of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations 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<sub>x</sub>)

 $NO_X$  are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone and react in the atmosphere to form acid rain.  $NO_X$  is emitted from solvents and combustion processes in which fuel is burned at high temperatures, principally motor vehicle exhaust and stationary sources such

as electric utilities and industrial boilers. In terms of NO<sub>X</sub> emissions, the two principal species of NO<sub>X</sub> are nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>), with the vast majority (95 percent) of the NO<sub>X</sub> emissions being comprised of NO. NO is converted to NO<sub>2</sub> 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<sub>X</sub> 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 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], 2016).

#### Sulfur Dioxide (SO<sub>2</sub>)

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<sub>2</sub>) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO<sub>2</sub> to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

 $SO_2$  is a colorless, irritating gas with a "rotten egg" smell that is formed primarily by the combustion of sulfur-containing fossil fuels. Historically,  $SO_2$  was a pollutant of concern in Kern County, but with the successful implementation of regulations, levels have been reduced significantly.

#### **Health Effects**

High concentrations of SO<sub>2</sub> can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Health effects from exposure to emissions of SO<sub>2</sub> 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<sub>2</sub> 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<sub>2</sub>, in conjunction with high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO<sub>2</sub> also is a major precursor to particulate matter that is 2.5 microns or less (PM<sub>2.5</sub>), 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 SO2 and acid aerosols; and
- Subjective symptoms, such as headaches and nausea, in the absence of pathological abnormalities due to long-term exposure.

SO<sub>2</sub> easily injures many plant species and varieties, both native and cultivated. Some of the most sensitive plants include various commercially valuable pines, legumes, red and black oaks, white ash, alfalfa, and blackberry. The effects include:

- Visible injury to the most sensitive plants at exposures as low as 0.12 ppm for 8 hours;
- Visible injury to many other plant types of intermediate sensitivity at exposures of 0.30 ppm for eight hours; and
- Positive benefits from low levels in a very few species growing on sulfur-deficient soils.

• Increases in SO<sub>2</sub> concentrations accelerate the corrosion of metals, probably through the formation of acids. SO<sub>2</sub> 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<sub>10</sub> and PM<sub>2.5</sub>)

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<sub>10</sub>) and 2.5 microns or less in diameter (PM<sub>2.5</sub>). Thus, PM<sub>2.5</sub> is a subset of PM<sub>10</sub>. PM<sub>10</sub> and PM<sub>2.5</sub> 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<sub>2</sub> and NO<sub>X</sub> in the atmosphere to create sulfates (SO<sub>4</sub>) and nitrates (NO<sub>3</sub>), respectively. Secondary particles are of greatest concern during the winter months when low inversion layers tend to trap the precursors of secondary particulates.

In the western United States, there are sources of  $PM_{10}$  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**

The size of particles is directly linked to their potential for causing health problems. PM<sub>10</sub> and PM<sub>2.5</sub> 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<sub>10</sub> and PM<sub>2.5</sub> 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<sub>10</sub> and PM<sub>2.5</sub> 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<sub>10</sub>. Of greatest concern are recent studies that link PM<sub>10</sub> exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM<sub>10</sub> can also damage man-made materials and is a major cause of reduced visibility in many parts of the United States. Non-health-related effects include reduced visibility and soiling of buildings.

Premature deaths linked to particulate matter are now at levels comparable to deaths from traffic accidents and secondhand smoke. One of the most dangerous pollutants, fine particulate matter (e.g., from diesel exhaust) not only bypasses the body's defense mechanisms and becomes embedded in the deepest recesses of the lung but also can disrupt cellular processes. Population-based studies in hundreds of cities in the United States and around the world have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks. Long-term studies of children's health conducted in California have demonstrated that particulate pollution may significantly reduce lung function growth in children (CARB and American Lung Association of California, 2007).

A recent study provides evidence that exposure to particulate air pollution is associated with lung cancer. This study found that residents who live in an area that is severely affected by particulate air pollution are at risk of developing lung cancer at a rate comparable to nonsmokers exposed to secondhand smoke. This study also found approximately 16 percent excess risk of dying from lung cancer due to fine particulate air pollution (Dockery and Pope, 2006).

Another study shows that individuals with existing cardiac disease can be in a potentially life-threatening situation when exposed to high levels of fine air pollution. Fine particles can penetrate the lungs and cause the heart to beat irregularly, or can cause inflammation, which could lead to a heart attack (Peters et al., 2001).

Attaining the California particulate matter standards would annually prevent about 6,500 premature deaths, or 3 percent of all deaths. These premature deaths shorten lives by an average of 14 years. This is roughly equivalent to the same number of deaths (4,200 to 7,400) linked to secondhand smoke in 2000. In comparison, motor vehicle crashes caused 3,200 deaths, and 2,000 deaths resulted from homicide. Attaining the California particulate matter and ozone standards would annually prevent 4,000 hospital admissions for respiratory disease, 3,000 hospital admissions for cardiovascular disease, and 2,000 asthma-related emergency room visits. Exposure to diesel particulate matter (DPM) causes about 250 excess cancer cases per year in California.

#### Sulfates

Sulfates  $(SO_4^{2-})$  are particulate product that comes from the combustion of sulfur-containing fossil fuels. When sulfur monoxide or SO<sub>2</sub> is exposed to oxygen, it precipitates out into sulfates (SO<sub>3</sub> or SO<sub>4</sub>).

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<sub>2</sub> tends to have an even more toxic effect. In addition to particulates, SO<sub>3</sub> and SO<sub>4</sub> are also precursors to acid rain. SO<sub>x</sub> and NO<sub>x</sub> 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.

#### **Health Effects**

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ. Recent studies also show that lead may be a factor in high blood pressure and subsequent heart disease. Lead can also be deposited on the leaves of plants, presenting a hazard to grazing animals and humans through ingestion (USEPA, 2012).

This highly toxic metal has been used for many years in everyday products, and has been found to cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 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**

The following is a general description of the source and health effects from other pollutants of concern, including other pollutants of hydrogen sulfide (H<sub>2</sub>S), vinyl chloride, visibility-reducing particles, toxic air contaminants (TACs), DPM, Airborne Fungus (Valley Fever), and asbestos.

#### Hydrogen Sulfide

Hydrogen sulfide (H2S) 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 SO2 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, 2000):

- Acute exposure of humans to high levels of vinyl chloride via inhalation in humans has resulted in effects on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness.
- Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans. Acute exposure to extremely high levels of vinyl chloride has caused loss of consciousness; irritation to the lungs and kidneys; inhibition of blood clotting in humans; and cardiac arrhythmias in animals.
- Tests involving acute exposure of mice to vinyl chloride have shown high acute toxicity from inhalation exposure to the substance.
- Long-term exposure to vinyl chloride concentrations has been linked with the following chronic health effects (USEPA, 2000):
- Liver damage may result in humans from chronic exposure to vinyl chloride, through both inhalation and oral exposure.
- A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air have developed a set of symptoms termed "vinyl chloride disease," which is characterized by Raynaud's phenomenon (fingers blanch and numbness and discomfort are experienced upon exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).
- Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual and/or hearing disturbances, memory loss, and sleep disturbances) as well as peripheral nervous system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers) have also been reported in workers exposed to vinyl chloride.

Several reproductive/developmental health effects from vinyl chloride exposure have been identified (USEPA, 2000):

- Several case reports suggest that male sexual performance may be affected by vinyl chloride. However, these studies are limited by lack of quantitative exposure information and possible cooccurring 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**

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 DPM, 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.

#### **Health Effects**

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by the California Office of Environmental Health Hazard Assessment (OEHHA). CARB estimates that approximately 70 percent of the cancer risk that the average Californian faces from breathing TACs stems from diesel exhaust particles (CARB, 2000).

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel-particle levels measured in California's air in 2000 could cause 540 "excess" cancers (beyond what would occur if there were no diesel particles in the air) in a population of one million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for

Occupational Safety and Health, have calculated similar cancer risks from diesel exhaust as those calculated by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks (OEHHA – ALA, 2001).

#### Airborne Fungus (Valley Fever)

Coccidioidomycosis, commonly referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers, and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. 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, 2019a).

Valley Fever is not contagious and, therefore, cannot be passed on from person to person. Most of those who are infected would recover without treatment within six months and would have a life-long immunity to the fungal spores. In severe cases, especially in those patients with rapid and extensive primary illness, those who are at risk for dissemination of disease, and those who have disseminated disease, antifungal drug therapy is used. The type of medication used and the duration of drug therapy are determined by the severity of disease and response to the therapy. The medications used include ketoconazole, itraconazole and fluconazole in chronic, mild-to-moderate disease, and amphotericin B, given intravenously or inserted into the spinal fluid, for rapidly progressive disease. Although these treatments are often helpful, evidence of disease may persist and years of treatment may be required (Valley Fever Center for Excellence, 2019a).

**Table 4.3-3**, *Range of Valley Fever Cases*, presents the range of Valley Fever cases based on research conducted by the Valley Fever Center for Excellence.

TABLE 4.3-3:         RANGE OF VALLEY FEVER CASES					
Infection Classification	Percent of Total Diagnosed Cases				
Unapparent infections	60 percent				
Mild to moderate infections	30 percent				
Infections resulting in complications	5–10 percent				
Fatal infections	<1 percent				
SOURCE: Valley Fever Center for	or Excellence, 2019b.				

#### Asbestos

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. In addition, naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. According to information provided by the California Department of Conservation, Division of Mines and Geology, the project site is not located in an area where naturally occurring asbestos is likely to be present (California Department of Conservation, 2000).

#### **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 USEPA, CARB, and local air districts such as the SJVAPCD. Each of these agencies develops rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although USEPA regulations may not be superseded, some State and local regulations may be more stringent than federal regulations. The project site is located within the San Joaquin Valley Air Basin, which is under the jurisdiction of the SJVAPCD. SJVAPCD has developed CEQA guidance for assessing air quality impacts. In addition, Kern County has its own *CEQA Guidelines* for assessing air quality impacts.

## Federal

#### U.S. Environmental Protection Agency (USEPA)

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<sub>2</sub> (which is a form of NO<sub>X</sub>), SO<sub>2</sub> (which is a form of SO<sub>X</sub>), PM<sub>10</sub>, PM<sub>2.5</sub>, and lead. USEPA also has regulatory and enforcement jurisdiction over emission sources beyond state waters (outer continental shelf), and those that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking. USEPA's primary role at the state level is to oversee the state air quality programs. USEPA sets federal vehicle and stationary source emission standards and oversees approval of all State Implementation Plans (SIP), as well as providing research and guidance in air pollution programs. The SIP is a state-level document that identifies all air pollution control programs within California that are designed to meet the NAAQS.

#### State

#### California Air Resources Board (CARB)

CARB, a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California by administering the SIP. Its primary responsibility lies in ensuring implementation of the 1989 amendments to the CCAA, responding to the federal CAA requirements and regulating emissions from motor vehicles sold in California. CARB also sets fuel specifications to further reduce vehicular emissions.

The amendments to the CCAA establish the CAAQS, and a legal mandate to achieve these standards by the earliest practical date. These standards apply to the same criteria pollutants as the federal CAA, and also include sulfates, visibility reducing particulates, hydrogen sulfide and vinyl chloride (there are currently no NAAQS for these latter pollutants). They are also generally more stringent than the national standards in most cases, although recently promulgated NAAQS for 1-hour NO<sub>2</sub> and SO<sub>2</sub> can in some instances be more stringent than the respective CAAQS.

CARB is also responsible for regulations pertaining to TACs. The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into their local air basin. Each ACPD and air quality management districts (AQMDs) in the state ranks the data into high, intermediate and low priority categories. When considering the ranking, the potency, toxicity, quantity, volume and proximity of the facility to receptors are given consideration by an air district.

CARB also has on- and off-road engine emission-reduction programs that would indirectly affect the project's emissions through the phasing in of cleaner on- and off-road engines. Additionally, CARB has a Portable Equipment Registration Program that allows owners or operators of portable engines and associated equipment to register their units under a statewide program to operate their equipment which must meet specified program emission requirements, throughout California without having to obtain individual permits from local air districts. Since the project is not proposing to install any applicable stationary sources, the AB 2588 program would not apply to the project.

In 2007, CARB enacted a regulation for the reduction of DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles (13 California Code of Regulations Article 4.8, Chapter 9, Section 2449). This regulation provides target emission rates for particulate matter and NO<sub>X</sub> 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 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 tons per year to 10 tons per year. This change results in more businesses having to comply with Title V permitting requirements under the Extreme nonattainment designation.

Title V does not impose any new air pollution standards, require installation of any new controls on the affected facilities, or require reductions in emissions. Title V does enhance public and USEPA participation in the permitting process and requires additional record keeping and reporting by businesses, which results in significant administrative requirements.

#### California Renewables Portfolio Standard Program

Established in 2002 under SB 1078 and accelerated by SB 107 [2006] and SB 2 [2011], California's 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 (CEC) are jointly responsible for implementing the program. SCE is on track to meeting these obligations, and currently has contracts to generate 41.4 percent of its electricity from renewable resources by the year 2020 (CPUC, 2017). SB 100,

signed into law in September 2018, requires California utilities to increase the percentages of renewable energy sold to retail customers. The new targets are for 50 percent renewable resources by December 31, 2026, 60 percent by December 31, 2030, and 100 percent from eligible renewable energy resources and zero-carbon resources by 2045.

## Local

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

#### Kern County General Plan

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

#### 1.10: General Provisions; 1.10.2: Air Quality

#### Policies

- Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.
- Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, will ensure that:
  - (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
  - (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.
- Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.
- Policy 21: The County shall support air districts efforts to reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions.

Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.

#### Implementation Measures

- Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.
- Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:
  - 1. Minimizing idling time.
  - 2. Electrical overnight plug-ins.
- Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:
  - 1. Pave dirt roads within the development.
  - 2. Pave outside storage areas.
  - 3. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
  - 4. Use of alternative fuel fleet vehicles or hybrid vehicles.
  - 5. Use of emission control devices on diesel equipment.
  - 6. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
  - 7. Provide bicycle lockers and shower facilities on site.
  - 8. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
  - 9. The use and development of park and ride facilities in outlying areas.
  - 10. Other strategies that may be recommended by the local Air Pollution Control Districts.
- Measure J: The County should include  $PM_{10}$  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.

In 2006, Kern County Planning Department issued its own *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*. The document provides specific guidance for County-prepared EIRs, including air quality issues to be considered, analytical approaches and resources, and a cumulative impact analysis methodology. In general, Kern County defers to SJVAPCD on issues related to assessing air quality impacts (e.g., modeling, odors, risk assessment). In addition, Kern County recommends an assessment of visibility impacts for all industrial projects and any other projects that have components that could generate dust or emissions related to visibility. Kern County also requires a list of projects located within a 1-mile and 6-mile radius of the project boundary.

#### San Joaquin Valley Air Pollution Control District

SJVAPCD attains and maintains air quality conditions in the San Joaquin Valley Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of SJVAPCD includes preparation of plans for attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. SJVAPCD also inspects stationary sources of air pollution and responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the federal Clean Air Act, CAAA, and CCAA.

The SJVAPCD has developed the following plans to attain and maintain the State and Federal standards:

- 1. The 2018 Plan for the 1997, 2006, and 2012  $PM_{2.5}\,Standard.$
- 2. The 2016 Plan for the 2008 8-hr Ozone Standard.
- 3. The 2013 Plan for the Revoked 1-hour Ozone Standard.
- 4. The 2004 Revisions to the Carbon Monoxide Maintenance Plan.

#### SJVAPCD Rules and Regulations

#### Rule 4101 – Visible Emissions.

A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than 3 minutes in any 1 hour, which is (SJVPACD, 2005):

- 1. As darker or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.
- 2. Of such opacity as to obscure an observer's view to a dress equal to or greater than the smoke described in Section 5.1 of this rule.

#### Rule 4102 – Nuisance.

A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public

or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property (SJVAPCD, 1992).

#### Rule 4601 – Architectural Coatings.

Limits volatile organic compound emissions from architectural coatings.

#### Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt Paving and Maintenance Operations.

Limits VOC emissions by restricting the application and manufacturing of certain types of asphalt for paving and maintenance operations.

#### Rule 9510 – Indirect Source Review.

The purpose of the independent source review (ISR) is to reduce emissions of  $NO_X$  and PM10 from new development projects. Rule 9510 places application and emission-reduction requirements on certain development projects to reduce emissions through onsite mitigation, offsite SJVAPCD-administered projects, or a combination of the two. The project proponent is required to submit an air impact assessment application concurrent with the last discretionary approval by the County pursuant to Rule 9510's requirements.

Although compliance with Rule 9510 is separate from the CEQA process, control measures used to comply with the Rule 9510 are considered mitigation to a less-than-significant impact under CEQA.

#### **Regulation VIII – Fugitive PM10 Prohibitions.**

Rules 8011–8081 are designed to reduce  $PM_{10}$  emissions (predominantly dust/dirt) generated by human activity, including construction and demolition, road construction, bulk materials storage, use of paved and unpaved roads, and carryout and trackout. Among the Regulation VIII rules applicable to the project are the following:

- Rule 8011 General Requirements;
- Rule 8021 Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities;
- Rule 8031 Bulk Materials;
- Rule 8041 Carryout and Trackout;
- Rule 8051 Open Areas;
- Rule 8061 Paved and Unpaved Roads; and
- Rule 8071 Unpaved Vehicle/Equipment Traffic Areas

#### **Indirect Source Mitigation Fee**

Indirect sources are land uses that attract or generate motor vehicles trips. Indirect source emissions contain many pollutants, principally  $PM_{10}$ , ROG, and NO<sub>X</sub>. The SJVAPCD included a requirement in the adopted 2003  $PM_{10}$  Plan to develop and implement an ISR rule by July 2004, with implementation to begin in 2005. The ISR rule went into effect in March 2006. Senate Bill (SB) 709 required the SJVAPCD to adopt by
regulation a schedule of fees to be assessed on area-wide and indirect sources of emissions. After public hearings, the district adopted Rule 9510 on December 15, 2005.

The purpose of Rule 9510 is to reduce emissions of  $NO_X$  and  $PM_{10}$  from new development projects. The rule applies to development projects that, upon full build-out, seek to gain discretionary approval for any one of the following: 50 residential units, 2,000 square feet of commercial space, 25,000 square feet of light industrial space, 20,000 square feet of medical or recreational space, 39,000 square feet of general office space, 100,000 square feet of heavy industrial space, 9,000 square feet of educational space, 10,000 square feet of government space, or 9,000 square feet of any land use not identified above. Several sources are exempt from the rule, including transportation projects and transit projects (exempt only from Rule 9510 Section 6.2 and Section 7.1.2), reconstruction projects that result from a natural disaster, and development projects whose primary source of emissions are subject to SJVAPCD Rules 2201 and 2010, which address stationary sources. Any development project that has a mitigated baseline of less than 2 tons per year (tpy) for  $NO_X$  and  $PM_{10}$  is also exempted from the mitigation requirements of the rule. Developers are encouraged to reduce as much air pollution as possible through onsite mitigation or the incorporation of air-friendly designs and practices into the project. Some examples include bike paths and sidewalks; traditional street design; medium- to high-density residential developments; locating near bus stops and bike paths; locating near different land use zones, such as commercial; and increasing energy efficiency. If these practices do not completely meet the required reductions (under the rule), new development projects are required to mitigate the remainder of their emissions by contributing to a mitigation fund that would be used to pay for the most cost-effective projects to reduce emissions. Examples include projects to retire or crush polluting cars, replace older diesel engines, and replace gas-powered lawnmowers with electric lawnmowers.

The ISR requires developers to reduce 20 percent of construction-exhaust  $NO_X$ , 45 percent of construction-exhaust  $PM_{10}$ ; 33 percent of operational  $NO_X$  over 10 years; and 50 percent of operational  $PM_{10}$  over 10 years.

The SJVAPCD estimates that the potential reductions from this program in 2010 will be 11.5 tons per day (4,197.5 tpy) of  $PM_{10}$  and 4.1 tons per day (1,496.5 tpy) of  $NO_X$ .

#### Air Quality Conformity Determination for Transportation Plans and Programs

The CAA amendments of 1990 require a finding to be made stating that any project, program, or plan subject to approval by a metropolitan planning organization conforms to air plans for attainment of air quality standards. Kern Council of Governments (COG) is designated the Regional Transportation Planning Agency and Metropolitan Planning Organization for Kern County. In that capacity, Kern COG models air quality projections on population projections in conjunction with current general plan designations and estimated vehicle miles as well as the current Regional Transportation Plan (RTP) and the federal transportation plan for Kern County. These results are compared to pollutant budgets for each basin approved by USEPA in the 1999 base year. Kern County is contained within two air basins: San Joaquin Valley Air Basin and the Mojave Desert Air Basin. 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 the FTIP and RTP result in emissions that are less than the emission budgets of baseline emissions for CO, VOC, NO<sub>X</sub>, and PM<sub>10</sub> (Kern COG, 2016).

#### Kern County Public Health Services Department

Section 101080 of the California Health and Safety Code authorizes a local health officer to declare a local health emergency in the health officer's jurisdiction, or any part thereof, when the health officer determines that there is an imminent and proximate threat of the introduction of any contagious, infections, or communicable disease, chemical agent, noncommunicable biological agent, toxin, or radioactive agent. On April 2, 2020, the Kern County Health Officer issued an Order that was implemented to garner additional tools to assist with Kern County's compliance with Executive Order N-33-20 issued by the Governor of the State of California and the California Department of Public Health's gathering guidance due to COVID-19. The April 2, 2020 order was rescinded on May 2, 2020 by the Kern County Health Officer. The Kern County Public Health Services Department and the Kern County Health Officer continue to provide guidance and recommendations for residents and business of Kern County to safely conduct business, including construction activities, during this COVID-19 pandemic.

# 4.3.4 Impacts and Mitigation Measures

This section describes the impact analysis relating to air quality for the project including the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant. Where warranted, measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.

# Methodology

The air quality significance criteria were developed considering the CEQA significance criteria developed by the local air quality district in the project area, approved CEQA air quality checklists, and considering other federal criteria. The analysis presented within this section is based on both qualitative and quantitative approaches for determining air quality impacts associated with construction, operation, and maintenance of the project. The findings in the Air Quality and GHG Technical Report prepared for the project (located in Appendix B of this EIR), which was prepared in accordance with the Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* and SJVAPCD's 2015 *Guidance for Assessing and Mitigation Air Quality Impacts* documents, were used to assess the project's impacts related to air quality.

#### Air Quality Plan Consistency

As a component of the cumulative impact analysis, the Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* states that the following should be included in the consistency determination for existing air quality plans:

- Discuss project in relation to Kern COG conformity and traffic analysis zones (TAZs).
- Quantify the emissions from similar projects in the Ozone Attainment Plan for the applicable basin. Discuss the Ozone Attainment Plan for the applicable air district, development, and relation to regional basin, Triennial Plan, and SIP.

#### **Pollutant Emissions**

Impacts were quantitatively assessed using the following:

- Construction equipment horsepower, load factors, and emission factors from the *California Emissions Estimator Model* (CalEEMod) model, version 2016.3.2, and the *CalEEMod User's Guide* (BREEZE Software, A Division of Trinity Consultants [BREEZE], 2017)
- Vehicle emission factors, as incorporated from EMFAC2014 into the CalEEMod model, version 2016.3.2. However, vehicle emissions estimated by the CalEEMod model were replaced with manual calculations incorporating the latest emission factors available from EMFAC2017.
- Fugitive dust emission factors for grading, bulldozing, truck loading/dumping, and paved road travel from the CalEEMod model, which incorporates portions of *AP-42* (USEPA, 2011 and 2006)
- Fugitive dust control efficiencies from the South Coast Air Quality Management District's (SCAQMD) *CEQA Air Quality Analysis Handbook* (SCAQMD, 1993) and the Western Regional Air Partnership's (WRAP) *Fugitive Dust Handbook* (WRAP, 2006)

Refer to Appendix B for details on equipment fleet, hours of operation, vehicle miles traveled (VMT) and other assumptions used.

#### Construction

Construction of the project would generate emissions of ROG, NO<sub>X</sub>, CO, SO<sub>X</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> that could result in short-term air quality effects during the construction period. Emissions would originate from off-road equipment exhaust, employee and haul truck vehicle exhaust (on-road vehicles), fugitive dust from site grading and earth movement, and fugitive dust from concrete batching, if required.

County guidance states that an air quality assessment should include estimates of short-term construction emissions in tons per year. The estimates must include site grading and building construction emissions, with comparison to the adopted County CEQA thresholds and the applicable air district (SJVAPCD) thresholds. Per the County's guidance, all assumptions should be clearly presented, including length of each construction phase, equipment that would be used during each phase, and the amount of soil disturbance, including any import or export of soil. The emission factors used to estimate emissions should be clearly documented, and the model output should be included in the report.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction of the project, including emissions from construction worker vehicles, onsite construction equipment, and offsite vendor and haul truck trips (BREEZE, 2017). CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction activities from a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type used to represent the project and size, construction schedule, and anticipated construction equipment utilization, were based on information provided by project proponent, or default model assumptions if project specifics were unavailable.

Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the project proponent. See Appendix B for a complete list of construction assumptions, including equipment, and vehicles. For purposes of estimating project emissions, and based on information provided by the project proponent, it is assumed that construction of the project would commence

in 2021 and would last 12 to 14 months. Assuming the earliest start date for construction represents the worstcase scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

- Off-Road Equipment: Off-road equipment would be required for several construction activities including grading and structure construction. Based on assumptions provided in Appendix B of this EIR, several construction phases would run concurrently. For this analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. Emission factors for off-road construction equipment (e.g., loaders, graders, bulldozers) were obtained from the CalEEMod (version 2016.3.2) User's Guide appendix, which provides values per unit of activity (in grams per horsepower-hour) by calendar year (CARB, 2017). Criteria pollutants were estimated by multiplying the CalEEMod emission factors by the equipment inventory and activity assumptions (e.g., horsepower, hours of use per day) provided by the project proponent.
- **On-Road Vehicles:** On-road vehicles (e.g., pickup trucks, flatbed trucks, and passenger vehicles) would be required for material deliveries to the project site, material and equipment hauling within the project site, onsite crew and material movement, and employee commuting. Emission factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's light-duty automobile/light-duty truck vehicle categories. As provided in Appendix B of this EIR, peak daily construction employee commute trips would be approximately 336 (generating 672 one-way trips). In addition to the 336 maximum daily worker commute trips to the site, there would be up to 9 vendor and haul truck trips per day at peak construction activity. The majority of the truck deliveries would be for the photovoltaic (PV) system installation, as well as any aggregate material that may be required for road base.
- Water Trucks: Water trucks would be required for several construction phases to provide fugitive dust control, with as many as three expected on a given day. Water consumption during construction is estimated to be approximately 58.6 acre-feet (af) for dust suppression and earthwork over an approximately 12-month period. Water would be supplied from turnouts located at the project boundary.

Emission factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's light-duty automobile/light-duty truck vehicle categories. Per the project applicant, the average construction day would consist of 336 one-way employee commute trips. A 10.8-mile worker trip length was assumed, using default mileage provided in CalEEMod.

To account for fugitive dust emissions from vehicle travel on unpaved roadways in proximity of the project site, it was assumed that 2 miles per one-way trip for all trips would be on unpaved roads. Fugitive dust emissions from unpaved road travel was estimated using emission factors from USEPA's AP-42 *Compilation of Air Pollutant Emission Factors, Section 13.2.2 Unpaved Roads* guidance for publicly accessible unpaved roads (USEPA, 2006). Unlike publicly accessible unpaved roadways, fugitive dust emissions from vehicle travel on unpaved roadways within the project site were estimating using emission factors from USEPA's AP-42 *Compilation of Air Pollutant Emission of Air Pollutant Emission Factors, Section 13.2.2 Unpaved Roads* guidance for publicly accessible unpaved roadways, fugitive dust emissions from USEPA's AP-42 *Compilation of Air Pollutant Emission Factors, Section 13.2.2 Unpaved Roads* guidance for industrial unpaved roads (USEPA, 2006).

• Site Grading and Earth Movement: Fugitive dust emissions from earth movement (e.g., site grading, and bulldozing) were quantified using emission factors from CalEEMod. Data on the total graded acreage were provided by the project proponent and the graded acreage was assumed to be

650 total acres. Per the project proponent, it is assumed that all material would be balanced on site and, therefore, no material import or export is expected.

A specific schedule is not known at this time, but project construction is assumed to last 12 to 14 months, beginning in the first quarter of 2021. To compare with SJVAPCD's annual thresholds, and provide a conservative estimate of air quality emissions, construction activities were assumed to occur within a single calendar year.

#### Operation

Operation of the project would generate emissions of ROG, NO<sub>X</sub>, CO, SO<sub>X</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> that could result in long-term impacts on ambient air quality. Operational emissions associated with the project would be limited to vehicle travel by project employees to the site for routine maintenance and monitoring activities, water consumption, and solid waste generation. Long-term operational emissions associated with the project were also calculated using CalEEMod, version 2016.3.2. Long-term emissions would be predominately caused by mobile source emissions. Mobile sources for the project would primarily be motor vehicles (automobiles and light-duty trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The operations phase of the project was based on an assumption that the project would require eight full-time positions to maintain the infrastructure. However, as noted in the project description, the operation of the project would only require one to two employees on the project site periodically throughout out the year. However, the estimate of eight full-time positions used in the Air Quality and GHG Technical Report is conservative. These positions would generate 16 average daily trips. Combustion exhaust and fugitive dust  $(PM_{10} \text{ and } PM_{2.5})$  from vehicle travel on paved and unpaved surfaces during operation were estimated using the same methods as above, including CalEEMod, CARB's EMFAC2017 model, and EPA's AP-42 Compilation of Air Pollutant Emission Factors based on project-specific operational data (e.g., schedules, number of employees, truck volumes) provided by the project applicant.

A small amount of electricity would be needed to operate the project [lights for the substation and battery area, and to run heating, ventilation, and air conditioning (HVAC) within the battery energy storage system (BESS) structure] and would be provided directly from the electricity generated from the project site and from commercial power through a connection with Pacific Gas & Electric Company. This use would amount to a minimal use for equipment (computer consoles, etc.) needed to operate the facility from a remote location when needed. There would be no operations building requiring lighting for personnel and parking areas except lighting required for the emergency lighting system in the substation and BESS. Area source emissions are generated by maintenance equipment, landscape equipment, and use of products that contain solvents. Ongoing maintenance would include periodic panel replacement and biannual cleaning of the solar panels to maintain performance and efficiency. However, these activities would generate minimal area source emissions during operation of the project.

#### Health Risk Assessment

A Health Risk Assessment (HRA) associated with construction emissions was prepared and follows the methodologies prescribed in the California Environmental Protection Agency/Office of Environmental Health Hazard Assessment's (OEHHA's) Air Toxics Hot Spots Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2015), which was adopted in 2015 replacing the previous 2003 guidance manual. A HRA associated with operational emissions was also

performed for operational DPM emissions using the AERMOD dispersion model. HRA assumptions and results are provided in Appendix B of this EIR.

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 recommends a 30-year exposure duration (residency time) for residential locations (OEHHA, 2015). Note that PM<sub>10</sub> exhaust emissions are used as a surrogate for DPM based on guidance from the Office of Environmental Health Hazard Assessment.

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. Dispersion modeling assumptions and results are provided in Appendix B of this EIR. For each receptor, the modeled annual concentration from AERMOD was multiplied by the calculated dose (inhalation pathway only) factor and by one million to obtain the cancer risk, in chances per million. Construction was assumed to last one calendar year. Thus, the construction risk assessment assumes exposure begins at third trimester, runs for 0.25 percent (3 months) of a year, and the remaining 0.75 percent of a year (9 months) is assumed to occur in the 0 to <2 age bin. Fraction of time at home is set at 1.0 to be conservative.

#### **Ambient Air Quality Analysis**

Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* requires a dispersion modeling analysis of the maximum 24-hour average concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> resulting from construction in comparison to applicable ambient air quality standards and thresholds; therefore, an ambient air quality analysis (AAQA) was performed for the project during construction only, as operation of the project would be minimal, consisting of routine inspection and maintenance only. The purpose of the AAQA is to determine whether the project's construction emissions would cause or contribute to exceedances of any CAAQS or NAAQS during construction. The AAQA was performed using a two-step process to determine impacts. Dispersion modeling assumptions and results are provided in Appendix B of this EIR.

#### **CO Hotspots**

Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to these CO "hot-spots" may have a greater likelihood of developing adverse health effects. The potential for the 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 is 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.

#### Valley Fever Exposure

While there are no specific thresholds for the evaluation of potential Valley Fever exposure, the potential for Valley Fever exposure as a result of the project is evaluated based on the anticipated earth-moving activities, and considers applicant-proposed measures and compliance with Rule 8021, Section 6.3, which requires development and implementation of a dust control plan to help control the release of the *Coccidioides immitis* fungus during construction activities.

#### Asbestos

There are no quantitative thresholds related to receptor exposure to asbestos.

#### COVID-19

There are no definitive quantitative thresholds related to receptor exposure to COVID-19, and the relationship to exposure to  $PM_{2.5}$ .

# **Thresholds of Significance**

#### **Kern County**

The Kern County CEQA Implementation Document and Kern County Environmental Checklist includes items taken from previous versions of *CEQA Guidelines* Appendix G. However, Appendix G was updated in 2018, resulting in minor changes to the checklist items. The analysis herein is based on the updated *CEQA Guidelines*, which differ slightly from the Kern County CEQA Implementation Document and Kern County Environmental Checklist.

The current CEQA Guidelines state that a project could have a significant adverse effect on air quality if it would:

- a. Conflict with or obstruct implementation of the applicable air quality plan;
- b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.

Specifically, would implementation of the project would exceed any of the following adopted thresholds:

- i. SJVAPCD:
  - a. Operational and Area Sources:
    - 10 tons per year for ROG
    - 10 tons per year for NO<sub>X</sub>
    - 15 tons per year for  $PM_{10}$
  - b. Stationary Sources as Determined by District Rules
    - Severe Nonattainment: 25 tons per year
    - Extreme Nonattainment: 10 tons per year
- c. Expose sensitive receptors to substantial pollutant concentrations;
- d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

#### San Joaquin Valley Air Pollution Control District

The SJVAPCD adopted thresholds of significance in the 2015 *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI; SJVAPCD, 2015). Section 8.4.2 of the GAMAQI provides that project-related impacts on air quality may be significant when on-site emission increases from construction activities or operational activities exceed the 100 pounds per day screening level of any criteria pollutant after implementation of all enforceable mitigation measures. Under such circumstances, the SJVAPCD recommends that an ambient air quality analysis be performed to determine if emission increases from a project will cause or contribute to a violation of the ambient air quality standards based on the significance thresholds as follows:

- Construction and Operational (permitted and non-permitted equipment and activities) Emissions;
  - 10 tons per year for ROG
  - 10 tons per year for NO<sub>X</sub>
  - 100 tons per year for CO
  - 27 tons per year for SO<sub>X</sub>
  - 15 tons per year for PM<sub>10</sub>
  - 15 tons per year for PM<sub>2.5</sub>

SJVPACD's 2015 Guidance for Assessing and Mitigation Air Quality Impacts provides thresholds for analysis of health risk impacts from project operation, both permitted and non-permitted sources combined. The following are the significance thresholds for toxic air contaminants:

• Carcinogens: Maximally exposed individual risk equals or exceeds 20 in one million

- Non-Carcinogens, Acute: Hazard Index equals or exceeds 1 for the maximally exposed individual
- Non-Carcinogens, Chronic: Hazard Index equals or exceeds 1 for the maximally exposed individual

# **Project Impacts**

# Impact 4.3-1: The project would conflict with or obstruct implementation of the applicable air quality plan.

In general, a project would not interfere with the applicable air quality plan if it is consistent with growth assumptions used to form the applicable air quality plan and if the project implements all reasonably available and feasible air quality control measures. The consistency with the Air Quality Management Plan (AQMP) is discussed below for project construction and operation.

Air quality impacts are controlled through policies and provisions of the SJVAPCD, 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 SJVAPCD comply with this requirement. CARB reviewers approve or amend the document and forward the plan to USEPA for final review and approval within the SIP.

Implementation of the project would generate both temporary (construction) and long-term (operational) emissions, which could conflict with or obstruct with an applicable AQMP. Project impacts would be potentially significant before mitigation.

Air quality impacts are controlled through policies and provisions of the SJVAPCD, the Kern County General Plan, and the Kern County Code of Building Regulations. Each project should also demonstrate consistency with the SJVAPCD's adopted AQMP for ozone and PM<sub>10</sub>. The SJVAPCD is required to submit a "Rate of Progress" document to CARB that demonstrates past and planned progress toward reaching attainment for all criteria pollutants. 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 AQMP prepared for the San Joaquin Valley by SJVAPCD complies with this requirement. CARB reviewers approve or amend the document and forward the plan to USEPA for final review and approval within the SIP.

#### **Required Evaluation Guidelines**

*CEQA Guidelines* and the CAA (Sections 176 and 316) contain specific references regarding the need to evaluate consistencies between the project and the applicable AQMP for the projects. To accomplish this, CARB has developed a three-step approach to determine project conformity with the applicable AQMP:

- 1. Determination that an AQMP is being implemented in the area where the project is being proposed. SJVAPCD's most recently adopted air quality management plan is its current, modified 2016 8-hour AQMP that is approved by CARB and USEPA for the 2008 8-hour O<sub>3</sub> standard.
- 2. The project must be consistent with the growth assumptions of the applicable AQMP. The Kern COG growth modelling for the 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) provides for future employment/population factors. The project 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 AQMP.

3. *The project must contain in its design all reasonably available and feasible air quality control measures.* The project incorporates Regulation VIII dust measures and will comply with the ISR rule (Rule 9510).

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 AQMP, 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 any new employment opportunities afforded by the project were included in the growth assumptions used to develop the AQMP.
- The primary source of emissions from the project would be from construction and operation of vehicles that are licensed through the state and whose emissions are already incorporated into CARB's emissions inventory.

#### Construction

The project would comply with all applicable SJVAPCD rules and regulations. While the project would not exceed any SJVAPCD significance thresholds on an annual basis, as shown in Table 4.3-7, *Unmitigated Construction Emissions*, under Impact 4.3-3, construction of the project would exceed the SJVAPCD daily significance thresholds for NOx, CO, and  $PM_{10}$ . However, with the required compliance of the project with SJVAPCD's Rule 9510 (ISR Rule), which requires projects to reduce NO<sub>X</sub> emissions by 20 percent, the total NO<sub>X</sub> emissions generated by the project during construction would be below SJVAPCD's threshold of significance. Therefore, the project would not result in emissions of a magnitude that would obstruct the air quality planning goals set forth by the SJVAPCD and would have a less-than-significant impact. During construction, the project would incorporate Mitigation Measures MM 4.3-1 through MM 4.3-9 in order to further reduce impacts from fugitive dust, including applying dust suppressant material; limiting vehicle speeds; and watering exposed areas during construction, among others. The NO<sub>x</sub> and PM<sub>10</sub> exhaust emissions from construction equipment with a horsepower rating greater than fifty (50) horsepower would also be reduced by using newer, lower polluting construction equipment and cleaner fuels. With implementation of these mitigation measures, the construction emissions for NOx, CO, and PM<sub>10</sub> would be reduced, as shown in Table 4.3-8, *Mitigated Construction Emissions*, under Impact 4.3-3.

Because the project does not include any stationary sources, the stationary control measures identified in the SJVAPCD's 2016 Ozone Plan and Kern County's 2017 Ozone Attainment Plan are not applicable. Similarly, the project's construction emissions from heavy-duty, off-road equipment would not exceed the SJVAPCD's significance thresholds, as shown in Table 4.3-8. The mobile source control measures pertaining to heavy-duty, off-road equipment identified in the SJVAPCD's 2016 Ozone Plan are also not applicable. Therefore, the project's construction activities would neither conflict with nor obstruct implementation of the applicable air quality plans and no impacts would occur.

Overall, based on the above, with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-6 and MM 4.3-8 through MM 4.3-9, any potential impacts to criteria pollutants designated as nonattainment within the SJVAPCD would be reduced and construction of the project would not result in a conflict with or obstruct implementation of applicable air quality plans. Therefore, impacts would be less than significant.

#### Operation

The project would be consistent with the existing land use designations in the current Kern County General Plan and would not introduce a land use that would induce population or housing growth that could result in a substantial increase in vehicle miles traveled and associated criteria pollutant emissions. When compared against the current zoning of the project site that would allow for the development of agricultural uses, the solar facility would result in less operational emissions from mobile and area sources that would be generated. The only source of operational emissions associated with the project would be those generated from mobile sources traveling to and from the project area to perform routine maintenance and occasional panel washing. As no onsite maintenance and operations staff are proposed, long-term emissions from the project would consist of sporadic vehicular emissions from employees, which would be minimal and would not result in a substantial increase in emissions.

As shown in Table 4.3-9, *Unmitigated Annual Operational Emissions*, under Impact 4.3-3, the project would not exceed the SJVAPCD operational threshold for any criteria air pollutant. Operational emissions would be further reduced with implementation of Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-7, which would be implemented to further reduce impacts to criteria pollutants designated as nonattainment within the SJVAPCD.

TAZs are basic spatial units of analysis facilitating the ability of transportation planners to forecast changes in commuting patterns, trip volumes, and modes of travel, and to develop plans to meet the changing demands for transportation facilities and capacities. There would be no measurable changes in traffic associated with development of the project. The project area is considered generally rural and agricultural. The nearest community is approximately 3 miles away. There are no intersections or roadways identified as LOS E or worse associated with the project, as discussed further in Section 4.15, *Transportation*, of this EIR. Additionally, there would be no signalization or channelization added to an intersection, as part of this project. Therefore, the project would have a less-than-significant impact on the Kern County TAZ.

The Kern COG's Regional Conformity Analysis Determination demonstrates that the regional transportation expenditure plans (*Destination 2030 Regional Transportation Plan and Federal Transportation Improvement Program*) in the Kern County portion of the San Joaquin Valley air quality attainment areas would not hinder the efforts set out in CARB's SIP for each area's non-attainment pollutants (ozone, CO, and PM<sub>10</sub>). The analysis uses an adopted regional growth forecast, governed by both the adopted *Kern COG Policy and Procedure Manual and a Memorandum of Understanding* between the County of Kern and Kern COG.

The growth represented by the project in the form of additional workers is negligible compared to the population growth anticipated by the Kern COG 2018 RTP/SCS, and the project incorporates all reasonably available and feasible air quality control measures; the project can therefore be determined in conformity with the AQMP.

Since the project is consistent with the 2018 RTP/SCS, and 2018 RTP/SCS projections are incorporated into the SIP, the project is also consistent with the SIP.

The project shows conformity with CARB's three step approach and the project growth was anticipated by the Kern COG RTP/SCS and incorporated into the AQMP. With implementation of Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-7, which would further reduce impacts to criteria pollutants currently designated as nonattainment within the SJVAPCD, operation of the project would not result in a conflict with or obstruct implementation of applicable air quality plans. Therefore, impacts would be less than significant.

Furthermore, the solar power generation system of the project would function to reduce the air pollutant emissions within the San Joaquin Valley Air Basin to the extent that the power generated would offset power production from fossil fueled power plants within (or contributory to) the San Joaquin Valley Air Basin. This power production is not projected within the existing air quality plans, and so the project would further aid in reducing air pollutant emissions and increase the potential for attainment of the Ozone Attainment Plan. Therefore, the project would not conflict with the SJVAPCD's Ozone Attainment Plan. As project operational emissions would also not exceed the SJVAPCD's significance thresholds, implementation of the project would not obstruct implementation of an air quality plan during operation. Therefore, operational impacts would be less than significant.

#### Decommissioning

The project has an anticipated operational life of up to 35 years. At the end of the project's operational term, the project proponent would determine whether the project site should be decommissioned and deconstructed, or if it would seek an extension of its CUP. If any portion of the project site is decommissioned, it would be converted to other uses in accordance with the applicable land use regulations in effect at that time. The project would be required to develop a decommissioning plan and financial assurances for review and approval by the Kern County Planning and Natural Resources Department. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, State, and County regulations.

At such time as the facility is decommissioned, equipment operation and site restoration activities would result in impacts to air quality. Given the fact that much of the construction equipment necessary to construct the project would also be required to decommission the site, it is reasonable to assume that decommissioning activities would be similar in nature to activities associated with construction of the project. However, impacts would be less than those of construction, as no grading would occur. Mitigation implemented during construction would also be implemented during decommissioning. Therefore, as with construction, with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9, any potential impacts would be reduced and decommissioning of the project would not result in a conflict with or obstruct implementation of applicable air quality plans. Therefore, impacts would be less than significant.

#### **Mitigation Measures**

- **MM 4.3-1:** The project shall continuously comply with the following: Construction and operation of the project shall be conducted in compliance with applicable rules and regulations set forth by the San Joaquin Valley Air Pollution Control District. Dust control measures outlined below shall be implemented where they are applicable and feasible. The list shall not be considered all-inclusive, and any other measures to reduce fugitive dust emissions not listed shall be encouraged.
  - a. Land Preparation, Excavation and/or Demolition. The following dust control measures shall be implemented:
    - All soil excavated or graded shall be sufficiently watered to prevent excessive dust. Watering shall occur as needed with complete coverage of disturbed soil areas. Watering shall take place a minimum of twice daily on unpaved/untreated roads and on disturbed soil areas with active operations.

- ii. All clearing, grading, earth moving, and excavation activities shall cease during periods of winds greater than 20 miles per hour (averaged over one hour), if disturbed material is easily windblown, or when dust plumes of 20 percent or greater opacity impact public roads, occupied structures, or neighboring property.
- iii. All fine material transported off site shall be either sufficiently watered or securely covered to prevent excessive dust.
- iv. Areas disturbed by clearing, earth moving, or excavation activities shall be minimized at all times.
- v. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.
- vi. Where acceptable to the Kern County Fire Department, weed control shall be accomplished by mowing instead of disking, thereby, leaving the ground undisturbed and with a mulch covering.
- b. Site Construction. After clearing, grading, earth moving and/or excavating is completed within any portion of the project sites, the following dust control practices shall be implemented:
  - i. Once initial leveling has ceased, all temporality open and inactive soil areas within the construction site shall be (1) seeded and watered until plant growth is evident, (2) treated with a dust palliative, or (3) watered twice daily until soil has sufficiently crusted to prevent fugitive dust emissions.
  - ii. Dependent on specific site conditions (season and wind conditions), revegetation shall occur in those areas so planned as soon as practical after installation of the solar panels. A native seed mix of grass and flowers shall also be added to the spread topsoil to enhance regrowth.
  - iii. All active disturbed soil areas shall be sufficiently watered at least twice daily or have dust palliatives applied to prevent excessive dust.
- c. Vehicular Activities. During all phases of construction, the following vehicular control measures shall be implemented:
  - i. Onsite vehicle speed shall be limited to 15 miles per hour.
  - ii. All areas with vehicle traffic shall be paved, treated with dust palliatives or watered a minimum of twice daily.
  - iii. Streets adjacent to the project sites shall be kept clean, and project-related accumulated silt shall be removed.
  - iv. Access to the project sites shall be by means of an apron into the project sites from adjoining surfaced roadways. The aprons shall be surfaced or treated with dust palliatives. If operating on soils that cling to the wheels of vehicles, a grizzly, wheel washer, or other such device shall be used on the road exiting the project sites, immediately prior to the pavement, in order to remove most of the soil material from vehicle tires.

- **MM 4.3-2:** Prior to issuance of any grading permit, the project proponent shall submit a Site-Specific Dust Control Plan for review and approval by the Kern County Planning and Natural Resources Department. The Site-Specific Dust Control Plan shall serve to minimize fugitive dust emissions during project construction. The Site-Specific Dust Control Plan shall take into consideration grading and construction schedule, seasonal winds, site-specific wind patterns and soil conditions to ensure adequate measures are implemented to manage fugitive dust. The Site-Specific Dust Control Plan shall:
  - a. Identify a comprehensive grading schedule for the entire project site. When feasible, grading activities shall be minimized to those areas necessary for project access and installation of solar panels and other areas of infrastructure associated with the solar facility.
  - b. The Site-Specific Dust Control Plan shall identify, in addition to those measures required by the air district, all measures being undertaken during construction activities and operational activities to ensure fugitive dust being blown off site is minimized. Measures may include, but are not limited to:
    - i. Use of water trucks as required for the expected level of winds in the area.
    - ii. Use of dust suppressant (i.e., soil binders or mulch).
    - iii. Pre-seeding and irrigating prior to construction to create vegetation with useful root structures.
    - iv. Construction of dust screening in appropriate locations around the project site (i.e., fence slats or mesh screening).
    - v. A copy of the approved Site-Specific Dust Control Plan shall be kept at the on-site construction office and all measures included in the Site-Specific Dust Control Plan shall be included on all Grading Plans issued for the project by the Kern County Public Works Department.
- **MM 4.3-3:** Prior to issuance of any building and grading permits, the project proponent shall provide the Kern County Planning and Natural Resources Department with proof that an Indirect Source Review application has been approved by the San Joaquin Valley Air Pollution Control District.
- **MM 4.3-4:** Valley Fever. Prior to ground disturbance activities, the project proponent shall implement the following Valley Fever Provisions:
  - a. Provide evidence to the Kern County Planning and Natural Resources Department that the project operator and/or construction manager has developed a "Valley Fever Training Handout", training, and schedule of sessions for education to be provided to all construction personnel. All evidence of the training session materials, handout(s) and schedule shall be submitted to the Kern County Planning and Natural Resources Department within 24 hours of the first training session. Multiple training sessions may be conducted if different work crews will come to the site for different stages of construction; however, all construction personnel shall be provided training prior to beginning work. The training may be administered using video or other electronic media. The evidence submitted to the Kern County Planning and Natural Resources

Department regarding the "Valley Fever Training Handout" and Session(s) shall include the following:

- i. A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session.
- ii. Distribution of a written flier or brochure that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever.
- iii. Training on methods that may help prevent Valley Fever infection.
- iv. A demonstration to employees on how to use personal protective equipment, such as respiratory equipment (masks), to reduce exposure to pollutants and facilitate recognition of symptoms and earlier treatment of Valley Fever. Where respirators are required, the equipment shall be readily available and shall be provided to employees for use during work. Proof that the demonstration is included in the training shall be submitted to the county. This proof can be via printed training materials/agenda, DVD, digital media files, or photographs.
- b. The project proponent also shall consult with the Kern County Health Services Department to develop a Valley Fever Dust Management Plan that addresses the potential presence of the Coccidioides spore and mitigates for the potential for Coccidioidomycosis (Valley Fever). Prior to issuance of permits, the project operator shall submit the Plan to the Kern County Public Health Department for review and approval. The Plan shall include a program to evaluate the potential for exposure to Valley Fever from construction activities and to identify appropriate safety procedures that shall be implemented, as needed, to minimize personnel and public exposure to potential Coccidioides spores. Measures in the Plan shall include the following:
  - i. Provide High-Efficiency Particulate Air filters for heavy equipment equipped with factory enclosed cabs capable of accepting the filters. Require contractors utilizing applicable heavy equipment to furnish proof of worker training on proper use of applicable heavy equipment cabs, such as turning on air conditioning prior to using the equipment.
  - ii. Provide communication methods, such as two-way radios, for use in enclosed cabs.
  - iii. Require National Institute for Occupational Safety and Health- approved half-face respirators equipped with minimum N-95 protection factor for use during worker collocation with surface disturbance activities, as required per the hazard assessment process.
  - iv. Cause employees to be medically evaluated, fit-tested, and properly trained on the use of the respirators, and implement a full respiratory protection program in accordance with the applicable California Occupational Safety and Health Administration Respiratory Protection Standard (8 California Code of Regulations Section 5144).
  - v. Provide separate, clean eating areas with hand-washing facilities.

- vi. Install equipment inspection stations at each construction equipment access/egress point. Examine construction vehicles and equipment for excess soil material and clean, as necessary, before equipment is moved off site.
- vii. Train workers to recognize the symptoms of Valley Fever, and to promptly report suspected symptoms of work-related Valley Fever to a supervisor.
- viii. Work with a medical professional to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever.
- ix. Work with a medical professional, in consultation with the County Health Services Department, to develop an educational handout for on-site workers and surrounding residents within 3 miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for exposure is available. Prior to construction permit issuance, this handout shall have been created by the project operator and reviewed by the project operator and reviewed by the County. No less than 30 days prior to any work commencing, this handout shall be mailed to all existing residences within 3 miles of the project boundaries.
- x. When possible, position workers upwind or crosswind when digging a trench or performing other soil-disturbing tasks.
- xi. Prohibit smoking at the worksite outside of designated smoking areas; designated smoking areas will be equipped with handwashing facilities.
- xii. Post warnings on-site and consider limiting access to visitors, especially those without adequate training and respiratory protection.
- **MM 4.3-5:** The project shall continuously comply with the following: The project proponent and/or its contractors shall implement the following measures during construction of the project:
  - a. All equipment shall be maintained in accordance with the manufacture's specifications.
  - b. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for extended periods of time.
  - c. Construction equipment shall operate longer than eight cumulative hours per day.
  - d. Electric equipment shall be used whenever possible in lieu of diesel- or gasoline-powered equipment.
  - e. All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NO<sub>X</sub> emissions.
  - f. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent) if permitted under manufacturer's guidelines.
  - g. Tier 3 engines shall be used on all equipment when available.

- **MM 4.3-6:** The other unpaved roads at the project sites shall be stabilized using water or soil stabilizers so that vehicle travel on these roads does not cause visible dust plumes:
  - a. Any unpaved access roads used by employees and/or for deliveries shall be paved or effectively stabilized using soil stabilizers that can be determined to be as efficient as or more efficient for fugitive dust control than the California Air Resources Board-approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation.
  - b. The other unpaved roads at the project sites shall be stabilized using water or soil stabilizers so that vehicle travel on these roads does not cause visible dust plumes.
  - c. Traffic speeds on unpaved roads shall be limited to no more than 15 miles per hour. Traffic speed signs shall be displayed prominently at all site entrances and at egress point(s).
- **MM 4.3-7:** The project proponent shall continuously comply with the following measures during operation of the project to control emissions from the on-site dedicated equipment (equipment that would remain on-site each day):
  - a. All onsite off-road equipment and on-road vehicles for operation/maintenance shall be new equipment that meets the recent the California Air Resources Board engine emission standards or alternatively fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric, as appropriate.
  - b. All equipment shall be turned off when not in use. Engine idling of all equipment shall be minimized.
  - c. All equipment engines shall be maintained in good operating condition and in tune per manufacturers' specification.
- **MM 4.3-8:** Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading), including decommissioning, the project proponent shall provide written notice to the public through mailing a notice to all parcels within 1,000 feet of the project site, no sooner than 15 days prior to construction activities. The notices shall include the construction schedule, a telephone number and email address where complaints and questions can be registered. Additionally, a minimum of one sign, legible at a distance of 50 feet, shall also be posted at the construction sites or adjacent to the nearest public access to the main construction entrances throughout construction activities which include the construction schedule (updated as needed) and a telephone number where complaints can be registered. Documentation that the public notice has been sent and the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department.
- **MM 4.3-9:** Prior to the issuance of any grading or building permit, the project proponent shall establish a "construction coordinator" and submit written documentation which includes their phone number, email address and mailing address. The construction coordinator shall be responsible for the following:
  - a. Responding to any local complaints about construction activities. The construction coordinator shall determine the cause of the construction complaint and shall be required to implement reasonable measures such that the complaint is resolved.

- b. Ensuring all appropriate construction notices have been made available to the public and that all appropriate construction signs have been installed.
- c. Maintaining an ongoing up-to-date log of all construction related complaints (i.e., blowing dust, inability to access parcels, etc.) during project construction activities. The log shall include the nature of the complaint and the measures that were undertaken to address the concerns. Upon request, the construction coordinator shall provide the log to the Planning and Natural Resources Department no later than three business days from request.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9, impacts would be less than significant.

# Impact 4.3-2: The project would expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are particularly sensitive to air pollution because they are persons that are ill, elderly, or have lungs that are not fully developed. Locations where such persons reside, spend considerable amount of time, or engage in strenuous activities are also referred to as sensitive receptors. Typical sensitive receptors include inhabitants of long-term healthcare facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, childcare centers, and athletic facilities. As discussed previously, the nearest sensitive receptors are located 2.5 miles from the project site. While there are no existing sensitive receptors in the vicinity of the project site, for purposes of this analysis, the proposed residential dwelling units for the Grapevine Specific and Community Plan (Cumulative Project No. 1) would be considered sensitive receptors. The nearest boundary for the Grapevine Specific and Community Plan is located approximately 0.85 miles south of the project site.

#### Toxic Air Contaminants (TACs)

The Air Toxic "Hot Spots" Information and Assessment Act, also known as AB 2588, identifies toxic air contaminant hot spots where emissions from specific stationary sources may expose individuals to an elevated risk of adverse health effects, particularly cancer or reproductive harm. Many toxic air contaminants are also classified as hazardous air pollutants (HAPs). AB 2588 requires that a business or other establishment identified as a significant stationary source of toxic emissions provide the affected population with information about health risks posed by the emissions.

Projects are considered for potential health risks wherein a new or modified source of TACs is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to TACs. The primary TAC of concern for this project would be DPM emitted within the project site from the construction and operation phases of the project. The emissions of potential DPM associated with construction activities are expected to be low and would be transient, temporary, and occur in varying locations within the project site. A screening HRA was performed for construction DPM emissions using the AERMOD dispersion model, along with equations from the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA, 2015), to estimate the project's cancer and non-cancer chronic health risks. The project's non-cancer acute health risks were not estimated because OEHHA has not established an acute reference exposure level for DPM and there are no acute non-cancer risk values associated with DPM. The cancer risk at the point of maximum impact (PMI), maximally

exposed individual resident (MEIR), maximally exposed individual worker (MEIW), and maximally exposed sensitive receptor are provided in **Table 4.3-4**, *Estimated Health Risk during Construction*. As illustrated therein, operation of the project would not result in increased cancer risk or hazard index in excess of SJVAPCD's significance thresholds. Overall, impacts associated with the project's potential to expose sensitive receptors to substantial TACs due to the project-generated construction emissions would be less than significant.

			Exceeds	Receptor Coordinates (UTM NAD 83 Zone 11)		
Risk	Value	SJVAPCD Threshold	Threshold (Y/N)?	Easting (meters)	Northing (meters)	
Cancer PMI Risk (in a million)	7.23	20 in 1 million	Ν	329,759.5	3,869,914	
Cancer MEIR Risk (in a million)	0.38	20 in 1 million	Ν	325,500	3,873,500	
Cancer Sensitive Risk (in a million)	0.26	20 in 1 million	Ν	325,500	3,870,500	
Cancer MEIW Risk (in a million)	0.13	20 in 1 million	Ν	329,759.5	3,869,914	
Chronic PMI HI	0.01	1.0	Ν	329,759.5	3,869,914	
Chronic MEIR HI	0.00055	1.0	Ν	325,500	3,873,500	
Chronic Sensitive HI	0.00037	1.0	Ν	325,500	3,870,500	
Chronic MEIW HI	0.01	1.0	Ν	329,759.5	3,869,914	

#### TABLE 4.3-4: ESTIMATED HEALTH RISK DURING CONSTRUCTION

NOTES:

HI = Hazard Index; NAD = North American Datum; UTM = Universal Transverse Mercator

SOURCE: Jacobs, 2019.

Operational activities expected to expose sensitive receptors to air toxics would include diesel-fueled trucks used to conduct operation and maintenance activities. An HRA was performed for operational DPM emissions using the AERMOD dispersion model, along with the latest version of California Air Resource Board's HARP program Air Dispersion & Risk assessment tool, to estimate the project's cancer and non-cancer chronic health risks. The cancer risk at the PMI, MEIR, MEIW, and maximally exposed sensitive receptor are provided **Table 4.3-5**, *Estimated Health Risk During Operation*. As illustrated therein, operation of the project would not result in increased cancer risk or hazard index in excess of SJVAPCD's significance thresholds. Overall, impacts associated with the project's potential to expose sensitive receptors to substantial TACs during operation of the project would be less than significant.

			Exceeds SJVAPCD	Receptor Coordinates (UTM NAD 83 Zone 11)		
Risk	Value	SJVAPCD Threshold	Threshold (Y/N)?	Easting (meters)	Northing (meters)	
Cancer PMI Risk (in a million)	8.9	20 in 1 million	Ν	329,766.9	3,870,288	
Cancer MEIR Risk (in a million)	0.06	20 in 1 million	Ν	325,500	3,873,500	
Cancer Sensitive Risk (in a million)	0.03	20 in 1 million	Ν	325,500	3,870,500	
Cancer MEIW Risk (in a million)	0.56	20 in 1 million	Ν	329,766.9	3,870,288	
Chronic PMI HI	0.0018	1.0	Ν	329,766.9	3,870,288	
Chronic MEIR HI	0.0000115	1.0	Ν	325,500	3,873,500	
Chronic Sensitive HI	0.00000695	1.0	Ν	325,500	3,870,500	
Chronic MEIW HI	0.00180	1.0	Ν	329,766.9	3,870,288	
NOTES						

TABLE 4.3-5:         ESTIMATED HEALTH RISK DURING OPERATIO
--

HI = Hazard Index; NAD = North American Datum; UTM = Universal Transverse Mercator

SOURCE: Jacobs, 2019.

#### 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<sub>3</sub> 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<sub>3</sub> and its precursors NO<sub>X</sub> and ROG and VOC; O<sub>3</sub> 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<sub>3</sub> can be transported by wind over long distances, "a specific tonnage amount of NO<sub>X</sub> 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<sub>3</sub> is done on a regional scale and it is inappropriate to analyze O<sub>3</sub> 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<sub>3</sub> 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 CEOA thresholds does not necessarily cause localized human health impacts as, even with relatively high levels of emissions, the SJVAPCD cannot determine "whether and to what extent emissions from an individual project directly impact human health in a particular area" (SJVAPCD, 2015). The SJVAPCD explained that this is particularly true for development projects like the project, where most of the criteria pollutants derive from mobile and area sources and not stationary sources. The SCAQMD also, as amicus curiae in Sierra Club, made similar points, reiterating that "an agency should not be required to perform analyses that do not produce reliable or meaningful results" (SCAQMD, 2015). SCAQMD agrees that it is very difficult to quantify health impacts with regard to O3, opining that the only possible means of successfully doing so is for a project so large that emissions would essentially amount to all regional increases (SCAQMD, 2015). With regard to particulate matter, the SCAQMD noted that while the CARB has created a methodology to predict expected mortality from large amount of  $PM_{2.5}$ , the primary author of the methodology has reported that it "may yield unreliable results due to various uncertainties" and CARB staff has been directed by its Governing Board to reassess and improve it, which factor "also counsels against setting any hard-and-fast rule" about conducting this type of analysis (SCAQMD, 2015). The amicus briefs filed by SJVAPCD and SCAQMD in Sierra Club are attached as part of Appendix B of this EIR.

#### Ambient Air Quality Standards

The USEPA and CARB have established NAAQS at levels above which concentrations could be harmful to human health and welfare, with an adequate margin of safety. Further, California air districts, like the SJVAPCD, have established emission-based thresholds that provide project-level estimates of criteria air pollutant quantities that air basins can accommodate without affecting the attainment dates for the NAAQS.

Accordingly, elevated levels of criteria air pollutants as a result of a project's emissions could cause adverse health effects associated with these pollutants. The SJVAPCD where the project is located is designated as an attainment area for O<sub>3</sub> (1- hour), PM<sub>10</sub> and PM<sub>2.5</sub> and nonattainment for O<sub>3</sub> (8-hour) under the NAAQS, and nonattainment for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> under the CAAQS.

#### **Project Heath Effects of Criteria Air Pollutants**

A sensitive receptor can be hypothetically exposed to a substance through several different pathways. Typically, the primary environmental exposure pathway is direct inhalation of gaseous and particulate air pollutants. However, there is the potential for exposure via non-inhalation pathways due to the deposition of particulate pollutants (DPM) in the environment.

An Air Quality Impact Assessment was performed to determine whether the project's operational emissions would cause or contribute to exceedances of any CAAQS or NAAQS. Following the Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Report*, maximum 24-hour average concentrations of primary PM<sub>10</sub> and PM<sub>2.5</sub> emissions were modeled using AERMOD. The predicted impacts for 24-hour PM<sub>10</sub> and PM<sub>2.5</sub> were 0.33  $\mu$ g/m<sup>3</sup> and 0.29  $\mu$ g/m<sup>3</sup>, respectively, and as shown in **Table 4.3-6**, *24-Hour PM<sub>10</sub> and PM<sub>2.5</sub> Impacts*. These values are below SJVAPCD's significant impact levels of 5  $\mu$ g/m<sup>3</sup> for 24-hour PM<sub>10</sub> and 1.2  $\mu$ g/m<sup>3</sup> for 24-hour PM<sub>2.5</sub>. Therefore, the operational emission impacts of the project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation.

<b>TABLE 4.3-6:</b>	24-Hou	IR PM <sub>10</sub> AND PM	I <sub>2.5</sub> IMPACTS
	Modeled	SJVAPCD SIL	Above the SIL

Pollutant	Impact	$(\mu g/m)^3$	(Y/N)?
24-hour PM <sub>10</sub>	0.33	5	Ν
24-hour PM <sub>2.5</sub>	0.29	1.2	Ν
SOURCE:	Jacobs, 20	19.	

Regarding health effects of criteria air pollutants, the project's potential to result in regional health effects associated with ROG, NO<sub>X</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> 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<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions from project implementation could occur. The project proposes the construction and operation of a large-scale utility solar project that would require dustgenerating 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<sub>2.5</sub> 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<sub>2.5</sub> 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 Measures MM 4.3-1 through 4.3-9, 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 Measures MM 4.3-1 through

MM 4.3-9, the project would implement Mitigation Measure MM 4.3-10, 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 4.3-1 through MM 4.3-10 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**

Regionally, project-related construction travel would add to regional trip generation and increase the VMT within the local airshed and the San Joaquin Valley Air Basin. Locally, construction traffic would be added to the roadway system in the vicinity of the project site. Although the SJVAPCD is currently an attainment area for CO, there is a potential for the formation of microscale CO "hotspots" to occur immediately around points of congested traffic. Typically, high CO concentrations are associated with urban roadways or intersections operating at an unacceptable LOS. Therefore, the SJVAPCD has established that if neither of the following criteria are met at all intersections affected by the developmental project, the project would result in no potential to create a violation of the CO standard:

- A traffic study for the project indicates that the LOS on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

If either of the above criteria can be associated with any intersection affected by the project, the project proponent would need to conduct a CO analysis to determine a project's significance.

The project area is considered generally rural and agricultural. The nearest town is approximately 7 miles away. There are no intersections or roadways identified as LOS E or worse associated with the project. Additionally, there would be no signalization or channelization added to an intersection, as part of this project. Since these two conditions do not exist, no further CO Hotspot analysis is required and no impacts would occur.

#### **Visibility Impacts**

As discussed above under Methodology, Kern County has established criteria to determine if a project would potentially result in a visibility impact; however, the SJVAPCD has not established guidance to address visibility in CEQA documents. Per the Kern County guidelines, a visibility analysis is not required since the project is not a large industrial stationary source project or a mining project, and it would not have long-term operational components that could generate dust or emissions plumes related to visibility. Compliance with Regulation VIII, including implementation of all feasible dust control measures specified in SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* and incorporated into a dust control plan, is sufficient mitigation to reduce air quality effects from construction-related PM<sub>10</sub> emissions to a less-than-significant level (SJVAPCD, 2015).

The project's potential to expose sensitive receptors to substantial pollutant concentrations associated with visibility impacts would be less than significant with the mitigation measures described above (Mitigation Measures MM 4.3-1 and MM 4.3-2), and no additional mitigation is required.

#### **Valley Fever**

The project has the potential to generate fugitive dust and suspend Valley Fever spores with the dust that could then reach nearby sensitive receptors. It is possible that onsite workers could be exposed to valley fever as fugitive dust is generated during construction. The project would be required to comply with Rule 8021 Section 6.3, which requires applicants to develop, prepare, submit, obtain approval of, and implement a Dust Control Plan, which would reduce fugitive dust impacts to less than significant for all construction phases of the project, which would also control the release of the *Coccidioides immitis* fungus from construction activities. This requirement is included in Mitigation Measure MM 4.3-2; however, exposure to the *Coccidioides immitis* fungus would be potentially significant and Mitigation Measure MM 4.3-4 is provided to further reduce impacts associated with Valley Fever and to protect on-site construction workers and nearby receptors. In addition, Mitigation Measure MM 4.3-11 would be required and includes payment of a onetime fee for public awareness programs related to valley fever. Therefore, the exposure to Valley Fever would be minimized and impacts would be reduced to less-than-significant levels with implementation of the mitigation measures identified above.

#### Asbestos

Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading of development projects, and at mining operations.

Serpentine and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. However, according to information provided by the Department of Conservation Division of Mines and Geology, the project site is not in an area likely to contain ultramafic rock or naturally occurring asbestos (California Department of Conservation, 2000). Therefore, impacts associated with exposure of construction workers and nearby sensitive receptors to asbestos would be less than significant.

#### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9 .would be required.

- **MM 4.3-10:** 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 Department for review and approval.
- **MM 4.3-11:** 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

Even with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM<sub>2.5</sub> along

with indirect linkages of criteria pollutants and COVID-19, on vulnerable populations would result in significant and unavoidable project level impacts.

# Impact 4.3-3: The project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The project is located in a sparsely developed area, and would not have any permanent stationary sources or equipment located on site that would generate objectionable odors or other emissions. However, during construction activities short-term, temporary odors from vehicle exhausts and other construction equipment would occur. These odors, however, are not expected to affect a substantial number of people because the site is located in sparsely populated areas and any odors or emissions would be temporary and would disperse rapidly. Therefore, impacts related to other emissions adversely affecting a substantial number of people 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 Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* three steps for estimating the potential significance of cumulative impacts: (1) evaluate localized impacts (Guideline Instruction 16a); (2) evaluate consistency with existing air quality plans (Guideline Instruction 16b); and (3) summarize CARB air basin emissions (Guideline Instruction 16c).

The geographic scope for cumulative air quality impacts is a 6-mile radius for regional impacts and a 1mile radius for impacts on sensitive receptors. These geographic scopes of analysis are appropriate for determining air quality impacts because of the Statewide, regional, and localized nature of air quality impacts, which could occur cumulatively with the project. As provided in Chapter 3, *Project Description*, two cumulative projects are located within 1-mile radius of the project site.

As noted previously, the San Joaquin Valley Air Basin is a nonattainment area for the state 1-hour O<sub>3</sub>, 8-hour O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> standards and is a nonattainment area for National 8-hour O<sub>3</sub> and PM<sub>2.5</sub> standards. As previously discussed, project construction and operational emissions of these pollutants are not anticipated to violate or lead to additional violations of NAAQS and CAAQS. Consistent with the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts*, the project would accordingly result in a less than significant cumulative impact in relation to criteria air pollutants:

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of State and Federal ambient air quality standards is a function of successful implementation of the District's attainment plans. Consequently, the District's applicant of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program.

Thus, if project specific emissions would be less than the thresholds of significance for criteria pollutants, as a general matter the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the District is in non-attainment under applicable federal or State ambient air quality standards." (SJVAPCD, 2015). However, because of scientific uncertainty regarding the offsetting of NO<sub>X</sub> emissions through VOC reductions, and because the County does not have jurisdiction and control over all potential projects in the San Joaquin Valley Air Basin and, thus, cannot assure that such projects would fully offset their criteria emissions pursuant to a Developer Mitigation Contract, cumulative impacts for criteria pollutants are considered significant and unavoidable.

# 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.

#### **Construction Emissions**

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC offgassing) and offsite sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

Construction, criteria air pollutant emissions associated with temporary construction activity were quantified using CalEEMod. Construction schedule assumptions, including phase type, duration, and sequencing, were based on information provided by the project applicant and is intended to represent a reasonable scenario based on the best information available. Default values provided in CalEEMod were used where detailed project information was not available. Details of the emission calculations are provided in Appendix B of this EIR.

Emissions of pollutants would occur during construction of the project from soil disturbance and equipment exhaust. Major sources of emissions during site preparation, grading, and solar panel construction include: (1) exhaust emissions from construction equipment and vehicles, (2) fugitive dust generated by construction vehicles and equipment traveling over exposed surfaces, and (3) soil disturbances from grading and backfilling. It is assumed that construction activities would overlap, and that construction is projected to commence in 2021 over a 12- to 14-month period.

**Table 4.3-7**, *Unmitigated Construction Emissions*, illustrates the estimated maximum daily and annual construction emissions generated during construction of the project. As shown therein, construction emissions would exceed the SJVAPCD daily significance threshold for NO<sub>X</sub>, CO, and PM<sub>10</sub>. However, construction emissions generated during construction of the project would not exceed the SJVAPCD annual significance threshold for ROG, NO<sub>X</sub>, CO, SO<sub>X</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. As the project is located within the San Joaquin Valley Air Basin, which is a nonattainment area for the state 1-hour O<sub>3</sub>, 8-hour O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> standards and is a nonattainment area for National 8-hour O<sub>3</sub> and PM<sub>2.5</sub> standards, Mitigation Measure MM 4.3-1 through MM 4.3-9 have been implemented to reduce the project's daily construction emissions

impacts related to NO<sub>X</sub>, CO, and PM<sub>10</sub>. Estimated maximum daily and annual construction emissions with implementation of these mitigation measures is provided in **Table 4.3-8**, *Mitigated Construction Emissions*.

<b>TABLE 4.3-7:</b>	UNMITIGATED	CONSTRUCTION	<b>EMISSIONS</b>
---------------------	-------------	--------------	------------------

			Pollu	tant		
Emissions Source	ROG	NOx	CO	SOx	<b>PM</b> <sub>10</sub>	PM <sub>2.5</sub>
Daily						
Average Daily Emissions (lbs/day) - Construction Year 2020	16.05	136.27	131.37	0.22	154.00	86.36
SJVAPCD Daily Thresholds (lbs/day)	100	100	100	100	100	100
Exceeds Daily Thresholds (Y/N)?	Ν	Y	Y	Ν	Y	Ν
Annual						
Project Annual Emissions (tons/year) - Construction Year 2020	1.01	8.29	8.06	0.01	12.38	6.74
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Exceeds Annual Thresholds (Y/N)?	Ν	Ν	Ν	Ν	Ν	Ν
NOTES:						
lbs/day = pounds per day						
SOURCE: Jacobs, 2019.						

#### TABLE 4.3-8: MITIGATED CONSTRUCTION EMISSIONS

			Pollu	tant		
Emissions Source	ROG	NOx	CO	SOx	<b>PM</b> <sub>10</sub>	PM2.5
Daily	-			-		
Average Daily Emissions (lbs/day) - Construction Year 2021	8.41	72.57	82.58	0.17	47.70	26.92
SJVAPCD Daily Thresholds (lbs/day)	100	100	100	100	100	100
Exceeds Daily Thresholds (Y/N)?	Ν	Ν	Ν	Ν	Ν	Ν
Annual						
Project Annual Emissions (tons/year) - Construction Year 2021	1.01	8.71	9.91	0.02	5.92	3.27
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Exceeds Annual Thresholds (Y/N)?	Ν	Ν	Ν	Ν	Ν	Ν
NOTES:						
lbs/day = pounds per day						
SOURCE: Jacobs, 2019.						

While the estimated  $PM_{10}$  and  $PM_{2.5}$  emissions shown in Table 4.3-8 account for dust generation during construction activities, the calculations do not directly address wind erosion issues associated with unworked barren soil after the removal of vegetation. The actual amount of wind erosion possible is highly dependent on the season of initial construction, the length of time until the solar modules are installed, the amount of disturbance to the barren surface, and the effectiveness of the type of dust suppressant used (if any is used). Eventually, the placement of the solar modules themselves will tend to reduce wind erosion at the site because the solar panels shelter the soil and limit the extent to which wind can move surface

particles. Implementation of mitigation measures MM 4.3-1 and MM 4.3-2 would require the preparation and implementation of a site-specific Dust Control Plan that would help control wind erosion.

As shown in Table 4.3-8, emissions of  $NO_X$ , CO, and  $PM_{10}$  during construction of the project would be reduced below the SJVAPCD's significance threshold with the implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9. However, as explained earlier, given existing scientific constraints, it is not feasible to analyze health risks associated with criteria pollutant emissions and impacts from construction activities and specifically with a new coronovirus (COVID-19) which has limited research and therefore the impacts on air quality and health for both project and cumulatively would remain significant and unavoidable.

#### **Operational and Maintenance Emissions**

The project involves development of a 115 megawatt (MW) photovoltaic solar energy facility with the ability to store up to 80 MW in a BESS. Operation of the project would generate criteria air pollutants. As with construction, pollutant emissions associated with long-term operations were quantified using CalEEMod. **Table 4.3-9**, *Unmitigated Annual Operational Emissions*, provides the annual operational emissions generated during operation of the project. As illustrated in Table 4.3-9, the project would not exceed the SJVAPCD operational threshold for any criteria air pollutant. Impacts during operation of the project would be less than significant and no mitigation would be required.

Pollutant (pounds/day)						
Emissions Source	ROG	NOx	CO	SOx	<b>PM</b> <sub>10</sub>	PM <sub>2.5</sub>
Area (landscape equipment)	0.00053	0.00005	0.00568	0	0.00002	00002
Operations and Maintenance	0.024	0.138	0.316	0.001	0.007	0.007
Operation Annual Emissions (tons/year)	0.025	0.138	0.322	0.001	0.007	0.007
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Exceeds Annual Thresholds (Y/N)?	Ν	Ν	Ν	Ν	Ν	Ν
SOURCE: Jacobs, 2019.						

 TABLE 4.3-9:
 UNMITIGATED ANNUAL OPERATIONAL EMISSIONS

#### **Cumulative Analysis**

The project is located within the Kern County portion of the San Joaquin Valley Air Basin, which is an area that is designated as nonattainment/severe for state 1-hour ozone standards, nonattainment for state 8-hour ozone standards, nonattainment for state 24-hour and annual arithmetic mean for  $PM_{10}$  standards, nonattainment for state annual arithmetic mean for  $PM_{2.5}$  standards, nonattainment/extreme for national 8-hour ozone standards, and nonattainment for national 24-hour and annual arithmetic mean for  $PM_{2.5}$  standards, and is under the jurisdiction of the SJVAPCD. The SJVAPCD's approach for assessing cumulative impacts is based on the forecasts of attainment and ambient air quality standards in accordance with requirements of the federal and State clean air acts.

#### Localized Impacts

As previously discussed, two cumulative projects are located within 1-mile radius of the project site. Significant cumulative impacts from the project, when considered with nearby, reasonably foreseeable

planned projects, would occur potentially, only during project construction. The majority of project emissions would occur temporarily during the construction phase. Subsequent to construction activities, there would be minimum emissions and insignificant cumulative impacts during operation of the project.

Kern County has determined that the previously listed project-level thresholds are defined, for purposes of determining cumulative effects, as the baseline for "considerable." In other words, if a project's emissions do not exceed the project-level thresholds, the project would not be considered cumulatively "considerable" and a cumulative impact assessment would not be required. As noted above, the project with mitigation would not exceed any of the significance thresholds during the construction phase, and so would not have emissions that are "considerable" with respect to cumulative construction impacts. Similarly, the project would not have cumulatively considerable operational impacts.

The project site is located approximately 0.85 miles from the approved Grapevine Specific and Community Plan (Cumulative Project No. 1), which allows for the construction of 12,000 dwelling units and approximately 5,100,000 square feet of commercial uses. These dwelling units would be considered sensitive receptors for the purposes of this cumulative analysis. However, the project would not result in any significant direct, indirect, or cumulative impacts and, thus, would not expose any receptors, sensitive or otherwise, to substantial pollutant concentrations. As such, a cumulative impact assessment is not required, despite the project's proximity to sensitive receptors. Additionally, the project would generate electricity using emission-free technology and would likely reduce the need to generate electricity using fossil fuel–based technology, so its cumulative contribution to air quality impacts is considered beneficial.

#### **Consistency with Existing Air Quality Plans**

Consistency with the air quality plan, even at the cumulative level, is based on a comparison of projectgenerated growth in employment, population, and vehicle miles traveled within the region. As previously NO<sub>X</sub> standards, nonattainment for state 8-hour ozone standards, nonattainment for state 24-hour and annual arithmetic mean for PM<sub>10</sub> standards, nonattainment for state annual arithmetic mean for PM<sub>2.5</sub> standards, nonattainment/extreme for national 8-hour ozone standards, and nonattainment for national 24-hour and annual arithmetic mean for PM<sub>2.5</sub> standards. As the project, with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9 would not result in significant temporary levels of NO<sub>X</sub>, CO, and PM<sub>10</sub> emissions during construction, the project would not obstruct SJVAPCD's ability to achieve further progress toward attainment of the state standards. However, because of scientific uncertainty regarding the offsetting of NO<sub>X</sub> emissions through VOC reductions, and because the County does not have jurisdiction and control over all potential projects in the San Joaquin Valley Air Basin and, thus, cannot assure that such projects would fully offset their criteria emissions pursuant to a Developer Mitigation Contract, cumulative impacts for criteria pollutants are considered significant and unavoidable.

With regard to operation, the project is not expected to induce growth or result in trips or criteria pollutant emissions during operation that would conflict with SJVAPCD's attainment of the state standards as the project is not expected to exceed thresholds for any nonattainment pollutant. Therefore, the project's incremental contribution to cumulative air quality impacts related to operation would not be cumulatively considerable and would not compromise existing air quality plans. Cumulative operational impacts would be less than significant.

The power produced by the project would serve to reduce air pollutant emissions within the San Joaquin Valley Air Basin, to the extent that the power is used to offset power production from fossil fueled power plants within (or contributory to) the San Joaquin Valley Air Basin, and also by providing power to allow

the displacement of fossil-fueled engines (such as agricultural pumps) with electrical power units. This power production is not projected within the existing air quality plans; thus, the solar facilities would further aid in reducing air pollutant emissions and increase the potential for attainment of the state standards.

#### California Air Resources Board (CARB) Air Basin Emissions

To evaluate the contribution of the project's operational emissions relative to the cumulative air quality conditions in Kern County and the San Joaquin Valley Air Basin, the project's specific emissions are compared to the emission projection data for Kern County and the San Joaquin Valley Air Basin. As illustrated in **Table 4.3-10**, 2020 Emissions Projections for the Project, Kern County, and San Joaquin Valley Air Basin, the increase emissions contributed by the project in relation to the total air basin appears to be insignificant since basin emissions would be the same regardless of whether or not the project is approved.

TABLE 4.3-10: 2020 EMISSIONS PROJECTIONS FOR THE PROJECT, KERN COUNTY, AND SANJOAQUIN VALLEY AIR BASIN

	Pollutant (tons/year)				
	ROG	NOx	<b>PM</b> <sub>10</sub>		
Kern County	61,508	16,017	14,493		
San Joaquin Valley Air Basin	370,810	75,358	115,362		
Project	0.025	0.138	0.007		
Project Percentage of Kern County	0.00004%	0.0009%	0.00005%		
Project Percentage of San Joaquin Valley Air Basin	0.00001%	0.0002%	0.000006%		
Kern County Percentage of San Joaquin Valley Air Basin	17%	21%	13%		
SOURCE: Jacobs, 2019.					

In addition, the power produced by the project could serve to reduce air pollutant emissions within the San Joaquin Valley Air Basin to the extent that the power is used to offset power production from fossil fueled power plants within (or contributory to) the San Joaquin Valley Air Basin, and also by providing power to allow the displacement of fossil-fueled engines (such as agricultural pumps) with electrical power units. Thus, the project's incremental contribution to the San Joaquin Valley Air Basin emissions inventory for 2020 would not be cumulatively considerable. Cumulative impacts would be less than significant.

#### **Cumulative Impacts Summary**

The discussion provided above evaluates localized impacts, including projects located within a 1- and 6mile radius; evaluates consistency with existing air quality plans; and compares project emissions to CARB emission projections for the region, consistent with the criterion provided in Kern County Planning Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports*.

Mitigated emissions for construction related to ambient air quality impacts are summarized in Table 4.3-8. As shown therein, emissions for NOX, CO, and PM10 during construction of the project would be reduced

below the SJVAPCD's significance threshold with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9. As such, it was determined that the project would not obstruct SJVAPCD's ability to achieve further progress toward attainment of the state standards.

However, potential cumulative impacts to air quality could occur from construction and operation of the proposed Project in combination with regional growth projections in the same air basin. It is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health impacts mentioned. The SJVAPCD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the San Joaquin Valley Air Basin at the present time and it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on public health and welfare. Therefore, cumulative impacts for criteria pollutants are considered significant and unavoidable.

#### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11 would be required.

#### Level of Significance after Mitigation

Cumulative impacts would be significant and unavoidable during temporary construction and decommissioning of the project after implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11. Cumulative impacts related to operation would be less than significant. The uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM<sub>2.5</sub> along with indirect linkages of criteria pollutants and COVID-19, on vulnerable populations would result in significant and unavoidable cumulative level impacts.

This page intentionally left blank

# 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. This 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; and 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.

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) (Jacobs, 2019), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS, 2019) and the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (USFWS, 2019a). The Kern County Draft Valley Floor Habitat Conservation Plan and the Recovery Plan for Upland Species of the San Joaquin Valley (USFWS, 1998) were also reviewed to identify other special-status species with potential to occur in the vicinity of the project site based on the habitats that exist. Other sources of information reviewed include the most recent and available aerial photographs (Google Earth, 2019), United States Geological Survey (USGS) 7.5-minute quadrangle topographic maps, soil survey maps (Natural Resource Conservation Science [NRCS], 2019), climatic data (National Oceanic and Atmospheric Administration [NOAA], 2019, Western Regional Climate Center [WRCC], 2019), and the project's site plans.

The analysis presented in this section is also based on the *Botanical Resources Survey Report for the Pastoria Solar Project*, the *Aquatic Resources and Watercourses Delineation Report*, the *Wildlife Resources Assessment* prepared for this project (Jacobs, 2019a, 2019b, and 2019c). The technical reports are provided in Appendix C.1, Appendix C.2, and Appendix D, respectively, of this EIR. The 2019 reports include a discussion of surveys conducted for biological resources including habitat assessments for special-status wildlife species, focused surveys for rare plants, and a general biological resource assessment for the project site. The property area, full methodologies, site conditions, and results of all field surveys are detailed in Appendix C.1, Appendix C.2, Appendix D of this EIR.

# 4.4.2 Environmental Setting

# **Regional Setting**

The project site is located in southern Kern County, in the southeastern portion of the San Joaquin Valley. The project site is approximately 25 miles south of the City of Bakersfield and 4 miles east of Interstate (I-) 5 as shown in Chapter 3, *Project Description*, Figure 3-2, *Project Vicinity*. The project site is located within the Kern County Draft Valley Floor Habitat Conservation Plan area.

# Climate

The climate in the southern San Joaquin Valley region consists of hot summer temperatures (average daily maximum near or above 90 degrees Fahrenheit [°F]) and low annual precipitation (approximately 12 inches). Daily temperature swings of 30°F can occur, with lows in the winter near freezing. Precipitation generally occurs within the winter and spring with very little occurring during the summer as a result of summer thunderstorms. Winds are generally mild to moderate from 0 to 10 mph with gusts upwards of 40 mph on rare occasions. The project's elevation is approximately 900 feet above mean sea level (amsl), with an average high of 95.9°F in July to a low of 36.6°F in January. Average rainfall is 11.68 inches annually (WRCC, 2019).

## Vegetation

Vegetation in the San Joaquin Valley region is influenced by arid climatic conditions, topography, and past land uses. This region is an elongate, north–south-oriented lowland surrounded by all other regions of the California Floristic Province (CA-FP) but bordered mostly by coastal ranges to the west and the Sierra Nevada Mountains to the east. On all borders it ends where oak-pine woodlands or mixed hardwood forests begin.

Native vegetation in the region has largely been replaced by a variety of agricultural uses. However, the San Joaquin Valley still supports grasslands, marshes, vernal pools, riparian woodlands, alkali sink vegetation, and stands of valley oak as well as some desert elements in the southern San Joaquin Valley (Hickman, 1993).

## Wildlife

The San Joaquin Valley supports a variety of reptiles, birds and mammals. Reptile species commonly occurring in the San Joaquin Valley portion of Kern County include the side-blotched lizard (*Uta stansburiana*), western whiptail (*Aspidoscelis tigris munda*), and gopher snake (*Pituophis melanoleucus*). Bird species common to the region include common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), western meadowlark (*Sturnella neglecta*), house finch (*Haemorhous mexicanus*), and red-tailed hawk (*Buteo jamaicensis*). Mammal species typical of the area include California ground squirrel (*Otospermophilus beecheyi*), coyote (*Canis latrans*), black-tailed jackrabbit (*Lepus californicus*) and bat species include the Yuma myotis (*Myotis yumanensis*).

### Sensitive Natural Communities

Sensitive natural communities are designated as such by CDFW and are generally considered to have important functions or values for wildlife or are recognized as declining in extent and/or distribution. These communities are considered threatened enough to warrant some level of protection. CDFW tracks communities it believes to be of conservation concern through the CNDDB, and plant alliances or associations with a state rank of S1 through S3 are considered to be sensitive communities. Wild oats grassland was the only community observed on site. This community is not considered high priority for inventory by CDFW and is not considered a sensitive natural community type as it has no ranking (CDFW, 2018). This signifies an absence of CDFW sensitive natural communities on site.

# Surface Hydrology and Jurisdictional Waters

Within the arid and semi-arid western United States, limited precipitation restricts wetland and riparian resources to 1 to 5 percent of the land surface, a relatively low proportion compared to other systems globally (U.S. Army Corps of Engineers [USACE], 2008).

The southern portion of San Joaquin Valley where the project occurs is an isolated subbasin that comprises approximately 2,600 square miles of alluvial valley. The project site is in the Middle Kern-Upper Tehachapi-Grapevine Subbasin and Liveoak Canyon-Pastoria Creek watershed. This subbasin is bound by the Tehachapi Mountains to the east and south and the San Emigdio Mountains to the west. The southern portion of the Central Valley, known as the San Joaquin Valley, is drained by the San Joaquin River, which is a known waters of the U.S. and state and is also subject to the jurisdiction of CDFW. This portion of the valley drains to Tulare Lake, which no longer exists due to diversions of its sources, and is known as the Tulare Lake Hydrologic Region. Tulare Lake was the largest of several similar lakes (e.g., Kern and Buena Vista lakes) in the lower basin. The lake historically received water from the Kern, Tule, and Kaweah Rivers, as well as southern tributaries of the Kings River. Diversions for agriculture and municipal purposes has resulted in the lake drying up except for residual wetlands and occasional floods. These lakes have now been dry for many decades and the lake bottoms are now heavily farmed. Aquatic resources in the region typically lack waters of the U.S. due them being non-navigable, isolated water bodies. However, they may contain a combination of waters of the state and CDFW jurisdiction.

# Wildlife Movement Corridors

The project site is adjacent to the Tehachapi Mountains with few deep drainages or other well-defined corridor-like topographic features to channel wildlife movements into specific corridors. Instead, movement of terrestrial animals is likely diffuse and spread throughout the entire area including the Tehachapi Mountain foothills and the surrounding native and non-native grasslands. The agricultural lands in the vicinity of the project, as well as the areas to the west, which are partially undeveloped and contain vegetation communities with scattered unpaved roads and commercial uses, provide for largely unrestricted wildlife movement through natural or semi-natural habitats. The California aqueduct, I-5, and SR-99 restrict wildlife movement to specific crossings within the very southern portion of the San Joaquin Valley. While migratory birds do fly over the San Joaquin Valley, there are no significant stopover sites in the vicinity of the project site, as there are no riparian habitats or water bodies with abundant resources to attract concentrations of birds.

# **Local Setting**

The project site is located approximately 4 miles east of I-5 and consists of approximately 647 acres that is entirely privately owned. The project site is crossed by several existing unimproved dirt roads that provide north to south and east to west access to the project site and surrounding agricultural lands. The project site is situated on flat, north-facing slopes below the Tehachapi Mountains. The elevation of the project site ranges from approximately 1,027 to 1,169 feet amsl. Existing development in the project vicinity includes a mix of row crops and grazing land. The general area to the north of the project site is primarily used for almond and pistachio farming. The area to the west of the project site is predominantly grazing land while the area to the east has few vineyards. Existing infrastructure within the area includes the Pastoria Energy Facility (PEF), a natural gas-fired, combined-cycle power plant, located approximately 0.5 miles east of the

project site. The California Aqueduct, which runs east-west and extends to the Edmonston Pumping Plant, is approximately 0.7 miles south of the project site. There is also a gravel quarry operation to the southeast of the site, between the PEF and Edmonston Pumping Plant.

The project site has recently been used for cattle grazing as evidenced by numerous cattle trails observed on aerial imagery. Aerial photographic evidence shows that the site was cultivated at one time. The topography of the site is flat, sloping downwards slightly to the northeast. A manmade agricultural ditch was observed along the length of the southern boundary within the solar field. A dormant distributary channel and three swales were also observed within the solar field. Two named streams (Cattle Creek and Pastoria Creek) and a distributary channel to Pastoria Creek are mapped as crossing the generator tie-line route.

# **Vegetation Communities**

A total of 28 plant species were identified on the project site during the biological surveys conducted in 2019. These plant species include: desert milkweed (Asclepias erosa), Maltese star-thistle (Centaurea melitensis), common tarweed (Centromadia pungens ssp. Pungens), alkali goldenbush (Isocoma acradenia), common sowthistle (Sonchus oleraceus), fiddleneck (Amsinckia sp. Plagi), popcornflower (obothrys sp.), black mustard (Brassica nigra), London rocket (Sisymbrium irio), burningbush (Kochia scoparia), prickly Russian thistle (Salsola australis), dove weed (Croton setiger), Chilean trefoil (Acmispon wrangelianus), dwarf white milkvetch (Astragalus didymocarpus), spider lupine (Lupinus benthamii), valley lupine (Lupinus microcarpus), burclover (Medicago polymorpha), sweetclover (Melilotus officinalis), shortfruit stork's bill (Erodium brachycarpum), redstem stork's bill (Erodium cicutarium), exserted Indian paintbrush (Castilleja exserta), jimsonweed (Datura wrightii), and puncturevine (Tribulus terrestris).

One CNDDB vegetation community occurs within the project site and lease area as shown on Figure 4.4-1, Vegetation Communities. The mapped vegetation communities and land cover types were defined using nomenclature from the Manual of California Vegetation (MCV) (Sawyer et al., 2009), Second Edition. The wild oats grassland vegetation community dominates the project site as a result of previous grazing and abundance of the community covering undeveloped areas in the vicinity.

A description of the single vegetation community type at the project site is provided below. The acreage of the vegetation community is provided in **Table 4.4-1**, Vegetation Community on the Project Site.

IABLE 4.4-1:     VEGETATION COMMUNITY ON THE PROJECT	SILE
Vegetation Community	Acreage
Avena (barbata, fatua) Herbaceous Semi-Natural Alliance	647
Wild Oats Grassland Red Brome or Mediterranean Grass Grasslands	


#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.4-1: VEGETATION COMMUNITIES

## Wild Oats Grassland

Wild oats grassland is a low biodiversity vegetation community dominated by non-native species. It has an open to continuous cover with slender wild oat (*Avena barbata*) or wild oat (*Avena fatua*) as dominant or codominant species within the herbaceous layer. Emergent trees and shrubs may be present at low cover. Canopy height among herbaceous species is generally less than 1.2 meters (4 feet). Besides wild oat, ripgut brome (*Bromus diandrus*), and rattail fescue (*Festuca myuros*) were also observed within this community. Other herbaceous species present in greater than trace amounts include redstem stork's bill (*Erodium cicutarium*), black mustard (*Brassica nigra*), and burclover (*Medicago polymorpha*). Native species are present in trace amounts (less than 1 percent cover) and include spider lupine (*Lupinus benthamii*) and valley lupine (*Lupinus microcarpus*). Areas of bare ground coincide with cattle water troughs, the fence line, and the haul road. The grasslands in the study area are very disturbed and support only a few native species. This community is not considered high priority for inventory by CDFW and is not considered a sensitive natural community type as it has no ranking (CDFW, 2018).

## Wildlife Species

Wildlife species observed or detected on the project site include one reptile, eighteen birds, and three mammals. These species commonly occur in the San Joaquin Valley.

## **Special-Status Species**

Special-status species are those plants and wildlife that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or local agencies as being under threat from development pressures as well as natural causes. Some of these species receive specific protection that is defined by the Federal or State Endangered Species Acts. Other species have been designated as "special-status" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities and/or special districts to meet local conservation objectives. Special-status species include the following:

- Species listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA).
- Species that meet the definitions of rare or endangered under *California Environmental Quality Act* (*CEQA*) *Guidelines* Section 15380.
- All of the plants constituting California Rare Plant Rank (CRPR) 1B and Rank 2B meet the definitions of Section 901, Chapter 10 (Native Plant Protection Act [NPPA]) or Sections 2062 and 2067 (CESA) of the Fish and Game Code, and are eligible for state listing.
- Species covered under an adopted National Community Conservation Planning (NCCP) Act/Habitat Conservation Plan (HCP);
- Wildlife designated by the CDFW as "species of special concern" or "special animals."
- Wildlife "fully protected" in California (Fish and Game Code Sections 3511, 4700, and 5050).
- Wildlife species protected as "fur-bearing mammals" (Fish and Game Code Section 4000 et seq.); and
- Avian species protected by the Migratory Bird Treaty Act (MBTA and California Fish and Game Code (Sections 3500–3516).

It should be noted that most avian species are afforded certain protections by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3500–3516). However, many of these, including some raptors, are common species and are not considered special-status on the basis of these regulations alone.

**Table 4.4-2**, *Special-Status Plant Species with the Potential to Occur on the Project Site*, and **Table 4.4-3**, *Special-Status Wildlife Species with the Potential to Occur on the Project Site*, below, summarize the special-status plant and wildlife species, respectively, that were evaluated for their potential to occur within the project site. Species with no potential (not likely to occur) to occur on the project site were excluded from further analysis. The "Potential to Occur" categories indicated in Table 4.4-2 and Table 4.4-3 are defined as follows:

- *Unlikely:* The project site and/or immediate area do not support suitable habitat for a particular species, and therefore the project is unlikely to impact this species.
- *Low:* The project site and/or immediate area only provide limited habitat for the species. In addition, the known range of the species may be outside of the immediate project site.
- *Moderate:* The project site and/or immediate area provide suitable habitat for the species, and proposed development may impact the species.
- *High:* The project site and/or immediate area provide ideal habitat conditions for the species and/or known populations occur in the immediate area.
- *Present:* Species observed on the site during focused surveys or other site visits.

Scientific Name	Common Name	Federal Status <sup>a</sup>	State Status <sup>b</sup>	<b>CRPR</b> <sup>c</sup>	Habitat Requirements	Potential to Occur
Caulanthus californicus	California jewelflower	FE	SE	1B.1	Sandy areas in valley and foothill grasslands, chenopod scrub, and pinyon and juniper woodland. Elevation range 61–1,000 meters (200–3,280 feet).	<b>Low.</b> Marginally suitable habitat is present, but not detected during surveys at the project. Closest record is from 2015 and is located approximately 10.4 miles northeast of the study area.
Caulanthus lemmonii	Lemmon's jewelflower	None	None	1B.2	Valley and foothill grasslands and pinyon and juniper woodlands. Elevation range 80– 1,580 meters (260– 5,200 feet).	<b>Low.</b> Habitat at the project is marginally suitable. Closest record is from 1991 and is located approximately 7.5 miles northwest of the study area.
Eschscholzia lemmonii ssp. kernensis	Tejon poppy	None	None	1B.1	Valley and foothill grassland, chenopod scrub. Little information available on microhabitat. 450– 4,500 feet. Blooms February through May.	Low. Marginally suitable habitat is present, but not detected during surveys at the project. Closest record is from 2011 and is located approximately 5 miles to the south.

# TABLE 4.4-2: Special-Status Plant Species with the Potential to Occur on the Project Site

Scientific Name	Common Name	Federal Status <sup>a</sup>	State Status <sup>b</sup>	<b>CRPR</b> <sup>c</sup>	Habitat Requirements	Potential to Occur
Opuntia basilaris var. treleasei	Bakersfield cactus	FE	SE	1B.1	Sandy or gravelly soils in valley and foothill grasslands, chenopod scrub, and cismontane woodlands. Elevation range 120–1,450 meters (390–4,760 feet).	<b>Low.</b> Marginally suitable habitat is present, but not detected during surveys at the project. Closest record is from 2018 and is located approximately 6 miles to the west.

 TABLE 4.4-2:
 Special-Status Plant Species with the Potential to Occur on the Project Site

<sup>a</sup> Description of Federal Codes: FE = Federally endangered. FT = Federally threatened

<sup>b</sup> Description of State Codes: SE = State endangered

<sup>c</sup> Description of CRPR Codes:

CRPR 1B.1= Eligible for state listing, CEQA review; seriously threatened in California

CRPR 1B.2= Eligible for state listing, CEQA review; moderately threatened in California

SOURCE: SWCA, 2018

## **Special-Status Plants**

Thirty-one special-status plant species were identified in the literature review and database search as historically occurring in the region. These species include: Mt. Pinos onion (Allium howellii var. clokeyi), Horn's milk-vetch (Astragalus hornii var. hornii), Heartscale (Atriplex cordulata var. cordulata) Lost Hills crownscale [Atriplex coronata var. vallicola (= A. vallicola)], Bakersfield smallscale (Atriplex tularensis), Palmer's mariposa-lily Calochortus palmeri var. palmeri), alkali mariposa lily (Calochortus striatus), California jewelflower (Caulanthus californicus), Lemmon's jewelflower (Caulanthus lemmonii), hispid bird's-beak (Chloropyron molle ssp. Hispidum), Slough thistle (Cirsium crassicaule), Vasek's clarkia (Clarkia tembloriensis ssp. Calientensis), Recurved larkspur (Delphinium recurvatum), calico monkeyflower (Diplacus pictus), Kern mallow (Eremalche parryi ssp. kernensis), Tehachapi buckwheat (Eriogonum callistum), Fort Tejon woolly sunflower (Eriophyllum lanatum var. hallii), Tejon poppy (Eschscholzia lemmonii ssp. kernensis), striped adobe-lily (Fritillaaria striata), delicate bluecup (Githopsis tenella), pale-yellow layia (Layia heterotricha), Comanche Point layia (Layia leucopappa), Munz's tidytips (Layia munzii), Madera leptosiphon (Leptosiphon serrulatus), Tehachapi monardella (Monardella linoides ssp. oblonga), San Joaquin woollythreads (Monolopia congdonii), Piute Mountains navarretia (Navarretia setiloba), Bakersfield cactus (Opuntia basilaris var. treleasei), San Joaquin adobe sunburst (Pseudobahia peirsonii), California alkali grass (Puccinellia simplex), and San Bernardino aster (Symphyotrichum defoliatum). Of these species, 27 were determined not likely to occur due to lack of suitable habitat or range constraints. The CNPS Rare Plant Inventory and CNDDB were searched to determine special-status species likely to occur within the project vicinity. Biological survey information from nearby projects was also considered. Using this information, followed by focused rare plant surveys and onsite observations in the field, a list of special-status plants with potential to occur on the project site and within its vicinity was prepared. Table 4-4.2 identifies the regulatory status, habitat requirements, and blooming period for each plant species that has some potential to occur, 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.

Of the four special-status plant species identified in Table 4.4-2, none are present or confirmed on the project site. All four species have a low potential to occur based on limited suitable habitat and known range occurring outside the immediate project site: Bakersfield cactus (*Opuntia basilaris var. treleasei*), California jewelflower (*Caulanthus californicus*), Lemmon's jewelflower (*Caulanthus lemmonii*), and Tejon poppy (*Eschscholzia lemmonii* ssp. kernensis). All four species are described further below.

**Bakersfield cactus.** Bakersfield cactus is a member of the cactus family (Cactaceae) that is found in Southern California, primarily in the hills and mountains that bound the San Joaquin Valley around Bakersfield. This species has a CRPR of 1B.1, meaning that it is rare, threatened, or endangered in California and elsewhere. It occurs in open sandy and gravelly soils in a range of habitats including valley and foothill grasslands, chenopod scrub and cismontane woodlands.

The closest record in the CNDDB is approximately 6 miles to the west of the project site. Considering the conditions at the project site, the potential for Bakersfield cactus to occur at the project was determined to be low. It was not detected during surveys conducted during the appropriate blooming period for this species (April to May). Therefore, it was determined to be absent.

**California jewelflower.** California jewelflower is a member of the mustard family (Brassicaceae) that is found in Southern California, primarily in the valley floor and hills and mountains that bound the San Joaquin Valley. This species has a CRPR of 1B.1, meaning that it is rare, threatened, or endangered in California and elsewhere. It occurs in a range of habitats including valley and foothill grasslands, chenopod scrub and pinyon and juniper woodland.

The closest record in the CNDDB is approximately 10.4 miles to the northeast of the project site. Considering the conditions at the project site, the potential for California jewelflower to occur at the project was determined to be low. It was not detected during surveys conducted during the appropriate blooming period for this species (February to May). Therefore, it was determined to be absent.

**Lemmon's jewelflower.** Lemmon's jewelflower is a member of the mustard family (Brassicaceae) that is found in Southern California, primarily in the southern coast ranges that bound the San Joaquin Valley to the west. This species has a CRPR of 1B.2, meaning that it is a watch list species and is of limited distribution. It occurs in a range of habitats including valley and foothill grasslands and pinyon and juniper woodland.

The closest record in the CNDDB is approximately 10.4 miles to the northeast of the project site. Considering the conditions at the project site, the potential for Lemmon's jewelflower to occur at the project was determined to be low. It was not detected during surveys conducted during the appropriate blooming period for this species (February to May). Therefore, it was determined to be absent.

**Tejon poppy.** Tejon poppy is a member of the poppy family (Papaveraceae) that is found in Southern California, primarily in the hills and mountains that bound the San Joaquin Valley. This species has a CRPR of 1B.1, meaning that it is rare, threatened, or endangered in California and elsewhere. It occurs in primarily in valley and foothill grasslands.

The closest record in the CNDDB is approximately 5 miles to the south of the project site. Considering the conditions at the project site, the potential for Tejon poppy to occur at the project was determined to be low. It was not detected during surveys conducted during the appropriate blooming period for this species (March to May). Therefore, it was determined to be absent.

Scientific Name	Common Name	Federal Status <sup>a</sup>	State Status <sup>b</sup>	Habitat Requirements	Potential to Occur
Reptiles					
Gambelia sila	blunt-nosed leopard lizard	FE	SE; FP	Scattered in undeveloped lands of the San Joaquin Valley and Coast Range foothills. The blunt-nosed leopard lizard prefers to inhabit open, sparsely vegetated areas of low relief. Nonnative grasslands and valley sink-scrub communities support blunt-nosed leopard lizard populations on the San Joaquin Valley floor. Valley needlegrass grasslands and alkali playas also provide suitable habitat for blunt-nosed leopard lizard. The most important aspect of any blunt-nosed leopard lizard habitat is sparse vegetation. Blunt-nosed leopard lizard rely mainly on speed to avoid predators and catch prey. A thick cover of herbaceous vegetation impedes blunt- nosed leopard lizard movement, making them more vulnerable to predators and less likely to capture prey. In areas with thick herbaceous vegetation, blunt-nosed leopard lizard will utilize barren washes and roads.	<b>Moderate.</b> Suitable grassland dispersal habitat occurs on the project site. Few suitable burrows were observed. Site is low quality due to very thick and dense cover. Closest record is located within approximately 3 miles of the study area (Jacobs, 2019).
Birds					
<i>Athene</i> <i>cunicularia</i>	Burrowing owl	None	SSC	Primarily a grassland species but persists and even thrives in some landscapes highly altered by human activity. Overriding characteristics of suitable habitat is burrows for roosting and nesting and relatively short vegetation with only sparse shrubs and taller vegetation. Owls in agricultural environments nest along roadsides and water conveyance structures (open canals, ditches, drains) surrounded by crops. Nest and roost burrows of the burrowing owl in California are most commonly dug by ground squirrels (e.g., <i>Spermophilus beecheyi</i> ), but they may use badger ( <i>Taxidea taxus</i> ), coyote (Canis latrans), and fox (e.g., San Joaquin Kit Fox, <i>Vulpes macrotis mutica</i> ) dens or holes. Structures such as culverts, piles of concrete rubble, and pipes also are used as nest sites. Nest boxes are often used by owls.	Low to Moderate. Potentially suitable grassland habitat is within the survey area. Species occurs within 3 miles of the survey area (Jacobs, 2019). Few burrows suitable for potential use by this species were observed within the boundaries of the proposed main project site. Site is low quality for this species due to the very thick and relatively tall cover grass. No individual burrowing owls or sign of burrowing owls was observed during biological surveys.

<b>TABLE 4.4-3:</b>	SPECIAL-STATUS	WILDLIFE SPECIES	WITH THE PO	TENTIAL TO O	CCUR ON THE L	PROJECT SIT	ſE
---------------------	----------------	------------------	-------------	--------------	---------------	-------------	----

Scientific Name	Common Name	Federal Status <sup>a</sup>	State Status <sup>b</sup>	Habitat Requirements	Potential to Occur
Gymnogyps californianus	California Condor	FE	SE, FP	Nesting occurs in cliff cavities, large rock outcrops, and large trees. Feeds primarily on mammalian carrion, and occasionally on the remains of reptiles and birds.	<b>Low:</b> Suitable nesting habitat is absent. Potential foraging habitat is limited due to the low density of carrion within the Survey Area. Critical habitat for the species is located within Survey Area (USFWS, 2019a). The species is known to occur within 10 miles of the Survey Area (Jacobs, 2019).
Mammals					
Taxidea taxus	American badger	None	SSC	Grasslands, savannahs, mountain meadows, Joshua tree woodlands, and desert scrub. Requires friable soils.	<b>Present.</b> Suitable habitat surrounds the project area. Records show the species occurs within 3 miles of Survey Area. An active badger den was observed inside southeastern border of project site on April 9, 2019.
Vulpes macrotis mutica	San Joaquin kit fox	FE	ST	Inhabit annual grasslands or grassy open stages with scattered shrubby vegetation. Require loose-textured sandy soils for burrowing, and a suitable prey base. Preferred habitat is often dependent on the density of kangaroo rats and lagomorphs, the two favored prey items of the San Joaquin kit fox.	<b>Moderate.</b> Potentially suitable grassland dispersal habitat is within the Survey Area. Species occurs within 3 miles of the Survey Area (Jacobs, 2019).

<b>TABLE 4.4-3:</b>	SPECIAL-STATUS WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE
---------------------	---

#### NOTES:

<sup>a</sup> Description of Federal Codes: BGEPA = Bald and Golden Eagle Protection Act; FE = Federally Endangered; FT = Federally Threatened

<sup>b</sup> Description of State Codes: SA = Special Animal; SE = State Endangered; ST = State Threatened; FP = California Fully Protected; SSC = California Species of Special Concern; FGS 460 = Take prohibited under FGC 460

SOURCE: Jacobs, 2019

## **Special-Status Wildlife**

Based on the literature review and database search, fourteen special-status wildlife species (one invertebrate, three amphibians, one reptile, four birds, and five mammals) have been historically recorded within the vicinity of the project site and/or have some potential to occur. Of these, nine were determined not likely to occur due to lack of suitable habitat or range constraints. Species with potential to occur are listed in Table 4.4-3, which identifies their regulatory status and habitat requirements, as well as the potential for the species to occur on the project site or immediate vicinity based on recent survey results. They are further discussed following the table.

Of the five special-status wildlife species identified in Table 4.4-3 above, one species was determined to be present on the project site: American badger (*Taxidea taxus*). Three species were determined to have a moderate potential to occur on the project site: blunt-nosed leopard lizard (*Gambelia sila*) burrowing owl (*Athene cunicularia*), and San Joaquin kit fox (*Vulpes macrotis mutica*). All five species are described further below.

## Reptiles

**Blunt-Nosed Leopard Lizard.** The blunt-nosed leopard lizard, a federal and state listed endangered species and State fully protected species, occurs in open, sparsely vegetated areas of low relief including nonnative grasslands and valley sink-scrub communities, and Valley needlegrass grasslands and alkali playas. In areas with thick herbaceous vegetation, blunt-nosed leopard lizard will utilize barren washes and roads.

Blunt-nosed leopard lizard was not detected during reconnaissance surveys conducted at the project site, which contains generally a thick herbaceous layer consisting of wild oat grasslands throughout the project site. The closest CNDDB record is within 3 miles of the project site. Blunt-nosed leopard lizard has a moderate potential to occur at the project site due to the presence of suitable habitat.

## Birds

**Burrowing Owl.** Burrowing owl, a CDFW species of special concern, is generally found in open areas, including grasslands and other areas containing low growing vegetation. Agricultural fields and disturbed areas are also suitable if there is a small mammal prey base. The species usually nests in existing burrows commonly made by California ground squirrel or other mammal species and rarely dig their own burrows. Burrowing owl burrows are distinctive, due to their size and the presence of sign such as whitewash and owl pellets. They can also use human-influenced features to nest in such as culverts, rock piles and piles of debris. The entirety of the project site constitutes potential foraging and breeding habitat for this species, which is widespread but uncommon throughout North America.

Burrowing owl and their sign were not detected during reconnaissance surveys conducted at the project site. Few burrows suitable for potential use by this species were observed within the boundaries of the proposed main project site. Site is low quality for this species due to the very thick and relatively tall cover grass. No individual burrowing owls or sign of burrowing owls was observed during biological surveys. Burrowing owl has a low to moderate potential to occur at the project site.

**California Condor.** California condor, a federal and state listed endangered species and CDFW fully protected species, is generally found in semi-arid, rugged mountains ranges surrounding the southern San

Joaquin Valley, including the Coast Ranges from Santa Clara County south to Los Angeles County, the Transverse Ranges, Tehachapi Mountains and southern Sierra Nevada. The species forages over open rangelands feeding on carrion such as cattle, sheep, deer and ground squirrel. The species roosts on cliffs and in large trees and snags and nests in caves, crevices, rock slabs or on large ledges.

California condor were not detected during reconnaissance surveys conducted at the project site. The project site lacks suitable nesting habitat for the species as it lacks geologic features required for nesting. California condor is known to forage in and along the Tehachapi Mountains but occurrences along the San Joaquin Valley floor are limited (USFWS, 2019b). Therefore, while the entirety of the project site constitutes potential foraging habitat for the species, it has a low potential to occur. However, critical habitat for the species is located throughout the entirety of the project site (USFWS, 2019a), **Figure 4.4-2**, *Critical Habitat*. Considering these conditions collectively, California condor is considered to have a low potential to occur at the project site.

### Mammals

**San Joaquin Kit Fox.** San Joaquin kit fox is a federally-listed endangered species and state-listed threatened species. Much of the undeveloped portions of the San Joaquin Valley provides habitat for this species as well as portions of the South Coast Ranges. The closest CNDDB record is within 3 miles of the project site. This is the smallest fox in North America, with an average body length of 30 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 and areas with open shrubby vegetation. 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. Dens are usually located deep within a complex of burrows. Breeding typically occurs in December to March, and pups usually disperse in August or September.

Six potential dens were observed at the project site during biological resources surveys conducted in 2018 **Figure 4.4-3**, *Wildlife Observations Map*. Individuals, their sign or suitable burrows were not observed during reconnaissance surveys in 2019. However, the entirety of the project site is suitable habitat for San Joaquin kit fox and has been detected 3 miles from the site thus it has a moderate potential to occur.

American Badger. American badger, a CDFW special-status species, is generally found in open areas, including open woodlands, desert scrub, and grasslands. Agricultural fields are also suitable if there is a small mammal prey base. The entirety of the project site constitutes potential habitat for this species, which is widespread but uncommon throughout North America. Badger dens are distinctive, due to their size and the presence of claw marks on the sides created when the den was dug.

One active den was observed at the project site during biological resources surveys conducted in 2019. American badger is considered present at the project site.



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.4-2: CRITICAL HABITAT



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.4-3: WILDLIFE OBSERVATIONS MAP

## **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. Sensitive natural communities do not occur within the project site. Wild oat grassland, the sole vegetation community within the project site, is not ranked by CDFW.

## **Critical Habitat**

The project site occurs entirely within USFWS-designated critical habitat for the federally endangered, stateendangered, and California fully protected California condor. Established or proposed critical habitat for other species does not occur on or near the project site. The critical habitat generally follows the township or quadrangle boundaries intended to identify areas of high California condor use at the time its critical habitat was designated in 1976. The designation predates the USFWS's current methodology to designate critical habitat which identifies the primary constituent elements essential for conservation of the listed species.

## Wildlife Movement Corridors

The habitat types in the project area are dominated by low vegetation, grasslands, which do not pose a physical barrier to the movements of most wildlife species. However, the project site is currently surrounded by barbed wire fence to contain grazing livestock, which would limit the movements of large ungulates such as pronghorn (*Antilocapra americana*), should they be present. Pronghorn were historically present by the thousands seasonally, but were mostly extirpated by the late 1880s and were locally extinct by the 1940s. Pronghorn have been reintroduced to the Central Valley, and as that population has expanded, the species has become a rare visitor to the northern foothills of the Tehachapi Mountains.

There is little topographic relief within the project site that would serve to funnel or direct wildlife movement into any particular areas or in specific directions. The entire project site slopes gently down and northward with a 1 to 2 percent gradient. There are very small drainages that flow toward the project site from areas to the south and through the project site at the gen-tie route but none occur in the larger project site. There is no evidence that the drainages provide avenues for concentrations of wildlife. In addition, there is no riparian vegetation to support concentrations of wildlife; all habitats within the project site are similar to those in the surrounding areas including those areas within the drainages.

The project site is a known migration corridor for certain wildlife species such as the San Joaquin kit fox. In the larger context, the project site lies at the southern end of the San Joaquin Valley, which is relatively flat and has few deep drainages or other well-defined corridor-like topographic features that channel wildlife movements into specific corridors. In addition, large swaths of land are developed for the purposes of agriculture and to a lesser degree commercial and industrial uses. Movement of terrestrial animals is likely diffuse and spread throughout the entire area. While migratory birds, such as Swainson's hawks, occur within the San Joaquin Valley, there are no significant stopover sites in the vicinity of the project, as there are no riparian habitats or water bodies with abundant resources to attract concentrations of birds. The undeveloped areas in the vicinity of the project which are mainly grassland communities with scattered unpaved roads, provide for largely unrestricted wildlife movements through natural or semi-natural

habitats. The California aqueduct, I-5 and SR-99 restrict wildlife movement to specific crossings within the southern portion of the San Joaquin Valley and restrict wildlife movement in the vicinity of the project site.

## Surface Hydrology and Jurisdictional Waters

Jurisdictional waters include aquatic resources such as streams, creeks, lakes, riparian areas, wetlands, and certain aquatic vegetation communities, which are considered sensitive biological resources and can fall under the jurisdiction of federal and/or state regulatory agencies including the USACE, CDFW, and/or Regional Water Quality Control Board (RWQCB). The definitions of the extent of regulatory agency jurisdictions are described in the Regulatory Setting below (Section 4.4.4, *Impacts and Mitigation Measures*).

Potentially jurisdictional channels and other aquatic resources were delineated in consultation with the CDFW and the delineation was verified during a field visit with CDFW on February 11, 2020. The jurisdictional delineation and consultation identified and verified the following features on the solar field portion of the project site: one agricultural ditch, one dormant distributary channel and three upland swale features. In addition, Cattle Creek, Pastoria Creek and one distributary channel were identified and verified along the gen-tie portion of the project site. Below is a summary of the delineation and verification for each of the different features.

USACE has determined that Pastoria Creek and a number of smaller drainages that are tributaries to Pastoria Creek are not waters of the U.S. due to their nature as non-navigable, isolated water bodies (RWQCB, 2009). It can be inferred that Pastoria Creek and its small tributaries in the study area, including Cattle Creek, the agricultural ditch, dormant distributary channel and swales, would also not be considered waters of the U.S. as they are also non-navigable, isolated features. In addition, the dormant distributary channel and swales in the study area lack any discernible OHWM, are non-navigable and isolated, are not considered aquatic resources, and would not be considered potential waters of the U.S. The agricultural ditch is potentially subject to the jurisdiction of CDFW and RWQCB due to the presence of an OHWM and bed and bank. The dormant distributary channel is not subject to the jurisdiction of CDFW as inactive, dormant channels are sometimes considered jurisdictional. The swales are not subject to the jurisdiction of CDFW or RWQCB due to the absence of an OHWM and bed and bank. The project will avoid direct impacts to these aquatic resources by placement of the panels, maintenance corridors, substation, parking, and battery areas to avoid them.

In addition, two potentially jurisdictional, intermittent, linear drainages and one ephemeral, linear drainage are located along the gen-tie line and were included in the site surveys. The two intermittent drainages are both named features with the western drainage being noted as Cattle Creek and the eastern drainage being noted as Pastoria Creek. The ephemeral drainage is unnamed and is a distributary channel to Pastoria Creek. Pastoria Creek and Cattle Creek combine into a single drainage and continue to the north of the project site where they appear to terminate either along Rancho Road or are diverted into a basin adjacent to existing agricultural fields northeast of the project site. As stated above, USACE has determined that Pastoria Creek is not a waters of the U.S. due to it being a non-navigable, isolated water body. Cattle Creek and the distributary channel are also non-navigable, isolated waterbodies and are therefore also not considered potential waters of the U.S. The three drainages lack vegetation associated with wetland or riparian habitats and contain wild oats grassland, which is not a riparian or wetland habitat. These three drainages are potentially subject to the jurisdiction of CDFW and the RWQCB due to their bed and bank features. Project gen-tie poles will avoid these drainages, including a 25-foot buffer.

The USFWS' National Wetland Inventory (NWI) contain data for multiple drainage features within the project site, including two named features, Pastoria Creek and Cattle Creek, which pass through the gen-tie route **Figure 4.4-4**, *National Wetland Inventory*. In addition, the NWI contained unnamed drainage features located within and along the southern boundary and in the northwestern corner of the solar field. The NWI features located along the gen-tie line and within the southern solar field correlate closely with those drainages observed during biological resources and channel delineation surveys and are believed to be the same features. The NWI feature located in the northwestern corner of the solar field did not correlate with a drainage observed during biological resources and channel delineation surveys and is believed to no longer exist.

# 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 9 lists those actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at Code of Federal Regulation (CFR), Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of 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.



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.4-4: NATIONAL WETLAND INVENTORY

## Migratory Bird Treaty Act (USC, Title 16, Sections 703–711)

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, domestically implements a series of treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (U.S. Code Title 16, Section 703). The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

# Bald and Golden Eagle Protection Act of 1940 (USC, Title 16, Section 668, enacted by 54 Stat. 250)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species, and establishes civil penalties for violation of this act. Take of bald and golden eagles includes to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

## Federal Clean Water Act (USC, Title 33, Sections 1251–1376)

The federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires a project proponent for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The RWQCB administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. USACE implementing regulations are found at CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the U.S. Environmental Protection Agency (USEPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

## State

# California Endangered Species Act (California Fish and Game Code Section 2050 et seq.)

The CESA establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under the CESA. For projects that would affect a listed species under both the CESA and the FESA, compliance with the FESA would satisfy the CESA if CDFW determines that the federal incidental take authorization is "consistent" with the CESA under CFGC Section 2080.1. For projects that would result in take of a species listed under the CESA only, the project proponent would have to apply for a take permit under Section 2081(b).

## **Regional Water Quality Control Board**

Under CWA Section 401, the RWQCB must certify that actions receiving authorization under CWA Section 404 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 may require compensatory mitigation for impacts to wetlands and/or waters of the state, which may include waters deemed 'isolated' or not subject to Section 404 jurisdiction, under the Solid Waste Agency of Northern Cook County (SWANCC) legal decision. The thrust of the SWANCC legal decision is that isolated, non-navigable, and intrastate waters are not "waters of the United States" subject to USACE jurisdiction under the Clean Water Act. Filling, dredging, or excavation of isolated waters may constitute a discharge of waste to waters of the state and if so, then prospective dischargers are required to file a Report of Waste Discharge to obtain Waste Water Discharge Requirements as authorization for that fill or waiver thereof from the RWQCB.

## Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under CWA Section 401.

## California Fish and Game Code (CFGC)

**Sections 1600 through 1616.** Under these sections of the CFGC, the project proponent is required to notify CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the code, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic

life. Based on this definition, a watercourse with surface or subsurface flows that supports or has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events.

Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

**Sections 2080 and 2081.** Section 2080 of the CFGC states that "No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act [NPPA], or the California Desert Native Plants Act." Pursuant to Section 2080.1 or 2081 of the code, CDFW may authorize individuals or public agencies to import, export, take, or possess state-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or memoranda of understanding if the take is incidental to an otherwise lawful activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project proponent ensures adequate funding to implement the measures required by CDFW, which makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

**Sections 3503, 3503.5, 3513, and 3800.** Under these sections of the CFGC, the project proponent is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds of prey or their nests or eggs; the taking or possessing of any migratory nongame bird as designated in the MBTA; the taking, possessing, or needlessly destroying of the nest or eggs of any bird; or the taking of any nongame bird pursuant to California Fish and Game Code Section 3800.

**Sections 3511, 4700, 5050, and 5515.** Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the CFGC. These statutes prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species.

**Sections 4000 through 4003.** Under Section 4000 of the CFGC, it is unlawful to conduct activities that would result in the taking, possessing, or destroying of any fur-bearing mammals, including kit foxes, without prior authorization from the CDFW.

## **CEQA Guidelines** Section 15380

In addition to the protections provided by specific federal and state statutes, *CEQA Guidelines* Section 15380(b) provides that a species not listed on the federal or state list of protected species nonetheless may be considered rare or endangered for purposes of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the CFGC dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either USFWS or CDFW. Thus,

CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected and requires findings of significance if there would be substantial losses. Natural communities listed by CNDDB as sensitive are considered by CDFW to be significant resources and fall under the *CEQA Guidelines* for addressing impacts. Local planning documents such as general plans often identify these resources as well.

# Native Plant Protection Act (California Fish and Game Code Sections 1900–1913)

California's Native Plant Protection Act (NPPA) requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of CDFW at least ten days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. The project proponent is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

## Regional

## Kern County Draft Valley Floor Habitat Conservation Plan

The project site is within the management area of the Draft Kern County Valley Floor Habitat Conservation Plan (KCVFHCP). The Draft Kern County Valley Floor Habitat Conservation Plan area occurs in the western portion of Kern County except for areas at the base of the Tehachapi Mountains. The area is limited to the southern San Joaquin Valley floor of Kern County including the project site.

The KCVFHCP is a pending Habitat Conservation Plan pursuant to the FESA covering over 3,110 square miles in Kern County with a purpose of creating a comprehensive strategy to conserve and protect the San Joaquin kit fox, blunt-nosed leopard lizard, and 23 other sensitive species. In addition, this HCP provides a streamlined program for complying with the requirements of the CESA and FESA. The HCP has not yet been approved by the USFWS, CDFW, or the Kern County Board of Supervisors.

If and when completed, incidental take permits for 13 covered species would be issued to participating local jurisdictions and state agencies. This incidental take authorization cannot be implemented, however, until the local governments complete the application for incidental take permits and receive approval from state and federal wildlife agencies.

## Local

## Kern County General Plan

The Kern County General Plan identifies the federal, state, and local statutes, ordinances, and policies that govern the conservation of biological resources that must be considered by Kern County during the decision making process for any project that could affect biological resources.

The Land Use, Open Space, and Conservation Element of the Kern County General Plan states that the element provides for a variety of land uses for future economic growth while also ensuring the conservation of the County's agricultural, natural, and resources attributes. Section 1.10, *General Provisions*, provides goals, policies, and implementation measures that apply to all types of discretionary projects.

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

#### **1.10:** General Provisions; **1.10.5:** Threatened and Endangered Species

#### Goal

Goal 1:	Ensure that the County can accommodate anticipated future growth and development what a safe and healthful environment and a prosperous economy by preserving valuable natures resources, guiding development away from hazardous areas, and assuring the provision 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.
- Policy 9: The County should develop and implement measures which result in long-term compensation for wildlife habitat, which is unavoidably damaged by energy exploration and development activities.

#### 5.4.5: Solar Energy Development

#### Policy

Policy 4: The County should encourage solar development in the desert and valley regions previously disturbed, and discourage development of energy projects on undisturbed land supporting State or federally protected plant and wildlife species.

## Chapter 19.81, Dark Skies Ordinance (Outdoor Lighting)

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

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

# 4.4.4 Impacts and Mitigation Measures

This section evaluates the impacts to biological resources that may occur during construction and operation of the project. It describes the sensitive biological resources located on and adjacent to the project site that may be affected and identifies the thresholds used to determine whether an impact would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion, where applicable.

# Methodology

The following impact analysis is based on existing and potential biological resources occurring within the project site and vicinity of the project identified through a review of relevant literature and a general biological resource assessment. Biological resources evaluated included sensitive habitats, special-status plant and animal species, and potential for wildlife movement corridors. The potential for special-status species to occur on the project site is based on the results of database research, biological assessments, surveys conducted on the project site and vicinity, presence of suitable habitat, and the proximity of the project site to previously recorded occurrences in the CNDDB, CDFW, and USFWS data. Other sources of information used include aerial photographs, topographic maps, soil survey maps, geological maps, climatic data, previous biological studies, and project plans.

## **Field Surveys**

Reconnaissance and directed surveys for sensitive plants, animals and other biological resources were conducted on the project site in June 2018 and April and May 2019. The impact analyses presented here address potential biological resources located on the project site based on results of field surveys detailed in Appendix D of this EIR.

# **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 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, 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 project has the potential to impact special-status plants and wildlife through the loss of habitat, as well as direct and indirect impacts on species, such as mortality of individuals or interference with reproductive success. Potential impacts to special-status plants and wildlife from construction, operation and maintenance, and decommissioning are discussed below.

## Construction

### **Special-Status Plants**

The project site contains marginally suitable habitat for a few special-status plants, all with a low potential to occur on site. These are California jewelflower, Lemmon's jewelflower, Tejon poppy and Bakersfield cactus. Direct impacts to the special-status plants and their habitat are not anticipated as the four species are considered absent from the project site, based on the negative results of properly timed, agency-approved focused rare-plant surveys.

Indirect impacts may include construction-generated dust and sedimentation into adjacent habitat supporting these plants that may affect photosynthetic uptake processes as a result of dust covering leaves, water uptake processes as a result of sedimentation around individual plants. These potential impacts could be mitigated to a less-than-significant level through implementation of Mitigation Measures MM 4.4-1 through MM 4.4-3 which include worker training and biological monitoring and Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-6, which include implementation of best management practices to reduce dust. Because of the low potential of occurrence, no mitigation beyond Mitigation Measures MM 4.4-1 through MM 4.4-3 and Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-6 is required for potential impacts to California jewelflower, Lemmon's jewelflower, Tejon poppy, or Bakersfield cactus.

With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-3 and Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-6, impacts to special-status plant species would be less than significant.

#### Special-Status Wildlife

One special-status wildlife species has been confirmed present for the project site: the American badger. Blunt-nosed leopard lizard, burrowing owl and San Joaquin kit fox have a moderate potential to occur at the project site. One special-status species that has a low potential to occur is the California condor. California condor is a resident in the project vicinity, but no suitable nesting habitat is present on the project site, and thus no significant impacts to this species would occur. Suitable habitat for migratory birds and raptors protected under the MBTA and the CFGC are also present. Construction of the project could result in direct impacts to these special-status species if present. Individual discussions for each species are further discussed below.

**California Condor and Raptors.** California condor typically fly at altitudes much higher than project infrastructure while foraging or traveling, and collision with the project is therefore extremely unlikely. The project site has not been documented as a nesting or roosting site for California condors, and due to a lack of suitable nesting or roosting sites on the project site, it is unlikely California condors would nest or roost at the site in the future. Onsite habitat characteristics and potential food sources indicate that the project site is potentially suitable for condor foraging; however, condor activity in proximity to the project area has historically been very low, and no condors have ever been observed foraging or feeding in the project site. Although condors can fly over a variety of terrain, the majority of condor flights follow mountains and foothills, where they use topography and associated orographic lift (ascending airflow caused by rising terrain) and thermal updrafts to generate lift (Snyder and Snyder, 2000). Condors have been found to fly at higher elevations over flatter, smoother terrain with relatively low vegetation cover and at lower elevations over rougher, steeper terrain with dense vegetation cover (Poessel et al., 2018). Condors may fly over the project on rare occasion, but are not expected to fly at altitudes that would result in an interaction with the project. In addition, there has been no documented fatalities or injuries of condors at solar projects. Impacts to this species' foraging habitats are expected to be negligible.

Potential impacts to California condor would be avoided or minimized through impact minimization measures described in Mitigation Measure MM 4.4-1 through MM 4.4-4, which includes monitoring, worker training, best management practices (BMPs), and condor specific measures including avoidance buffers. With implementation of these mitigation measures, impacts to California condor would be less than significant.

**Burrowing Owl.** Burrowing owl or their sign were not observed on the project site during 2018 and 2019 site visits, however, focused surveys were not conducted. The project site contains suitable foraging habitat for the species and suitable burrows for use by the species. Direct impacts to the burrowing owl and its habitat could occur as a result of project construction through the loss of available habitat and potential breeding burrows due to construction activities and increased human presence. Indirect impacts could also occur during construction if burrowing owls are nesting in adjacent offsite areas within 500 feet of the project site, and noise from construction activities harasses an owl to the point of abandoning an active nest site. These types of potential impacts to this species would be considered significant. However, implementation of Mitigation Measures MM 4.4-1 through MM 4.4-3, and MM 4.4-5, which include worker training, biological monitoring, BMPs, and pre-construction wildlife surveys to identify any active or potential burrows that may require avoidance, would reduce the potential impacts. Implementing these mitigation measures would ensure that no nesting or foraging burrowing owls are impacted during construction. Therefore, impacts to burrowing owl would be less than significant.

**San Joaquin Kit Fox.** San Joaquin kit fox or their sign were not observed on the project site and suitable burrows were observed within the project area. Direct impacts to the species and its habitat could include collision with vehicles on access roads or the loss of available habitat and potential burrows due to construction activities and increased human presence. These types of potential impacts to this species would be considered significant. Potential impacts would be avoided through impact minimization measures including preconstruction surveys to determine presence, and avoidance or relocation to reduce potential impacts to the species per Mitigation Measure MM 4.4-6. Potential impacts would be further reduced through implementation of Mitigation Measures MM 4.4-1 through MM 4.4-3 and MM 4.9-2, provided in

Section 4.9, *Hazards and Hazardous Materials*, of this EIR, which include monitoring and worker training and using agency-approved herbicides that are non-toxic to small mammals such as the San Joaquin kit fox and their prey sources. With implementation of these mitigation measures, impacts to San Joaquin kit fox would be less than significant.

**Blunt-Nosed Leopard Lizard.** Neither Blunt-nosed leopard lizard nor their sign were observed on the project site during 2018 and 2019 site visits. The species has been observed within approximately 3 miles of the project area (Jacobs, 2019). Direct impacts to this species, if present, could include collision with vehicles on access roads; mechanical crushing during site preparation, grading of new access roads, and preparation of staging locations; and general disturbance due to increased human activity. Furthermore, project implementation may result in permanent loss of habitat due to permanent structures or roads, and temporary loss of habitat from construction activities. These types of potential impacts to these species would be considered significant. Potential impacts would be avoided through impact minimization measures, including preconstruction surveys to determine presence, and avoidance to reduce potential impacts to the species per Mitigation Measures MM 4.4-7. Potential impacts would be further reduced through implementation of Mitigation Measures MM 4.4-1 through MM 4.4-3, which include monitoring, worker training, and BMPs. With implementation of these mitigation measures, impacts to blunt-nosed leopard lizard would be less than significant.

**American Badger.** An active American badger den was observed on the project site during 2019 site visits. Direct impacts to American badger and its habitat could include collision with vehicles on access roads, mechanical crushing during site preparation, grading of new access roads, and preparation of staging locations or the temporary and permanent loss of available habitat and potential burrows due to construction activities. Indirect effects due to increased human presence could cause displacement of this species during construction. These types of potential impacts to this species would be considered significant. Potential impacts would be avoided through impact minimization measures including preconstruction surveys to determine presence and avoidance or relocation to reduce potential impacts to the species per Mitigation Measure MM 4.4-8. Potential impacts would be further reduced through implementation of Mitigation Measures MM 4.4-1 through MM 4.4-3, which include monitoring, worker training, and BMPs. With implementation of these mitigation measures, impacts to American badger 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. Impacts to nesting birds could occur if construction occurs during the breeding season, which is generally considered to be February 1 through August 31 in the San Joaquin Valley. Impacts to these species would be considered significant. To reduce potentially significant impacts to nesting birds, Mitigation Measure MM 4.4-9 requires implementation of preconstruction clearance surveys as well as avoidance and minimization measures.

## **Operations and Maintenance**

Direct impacts to special-status species are unlikely to result from project operation and maintenance activities because project implementation during construction would remove habitat for special-status species on the project site, and project design features such as San Joaquin kit fox permeable fencing would allow small mammals and reptiles the ability to utilize the project site as a migration corridor. Additionally, Mitigation Measures MM 4.4-2 and MM 4.4-10 require methods designed to reduce wildlife mortality and

impacts, promote long-term project site suitability, and educate onsite personnel. Project operation could result in indirect impacts to wildlife in proximity of the project if nighttime lighting is used. However, the potential indirect impact from nighttime lighting during operation and maintenance would be located only at the onsite substation and battery storage facility and would be further 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 project would be required to implement Mitigation Measure MM 4.1-4, provided in Section 4.1, *Aesthetics*, of this EIR, which requires compliance with Kern County's Dark Skies Ordinance to minimize nighttime lighting in unincorporated areas of Kern County. Compliance with this measure to minimize nighttime lighting would reduce indirect impacts to wildlife to a less-than-significant level.

**California Condor.** Potential indirect impacts to foraging California condor from the operations and maintenance phase of the project may occur through "stranding" if the species lands within the site fencing. However, the risk of a California condor "stranding" is low as reported California condor fatalities have not been reported for solar projects.

Although small carrion items such as rodents and birds may occur in the area around solar panels on the project site they are not anticipated to attract California condor. In addition, the solar panels may provide shielding, making them difficult to detect by California condor flying overhead. Large carrion items commonly consumed by California condor and likely to occur in the region, such as cattle, are not anticipated to occur in the area around the solar panels. California condor are not likely to use the solar panels, perimeter fencing, and utility structures surrounding the facilities as perch sites. The project area represents less than 1 percent of a 5-mile-radius circle of a California condor's approximate foraging range, which is, up to 150 miles per day. Therefore, with development of the project site, 99 percent of the foraging habitat for this species would remain, and impacts would be less than significant. In order to determine if the operational phase of the project is resulting in a significant amount of avian mortality, Mitigation Measure MM 4.4-10 requires implementation of a monitoring program. The program would monitor avian mortality at the project site during operations and maintenance and provide quarterly reporting and recommendations to reduce the level of avian mortality. The project is unlikely to result in impacts to California condor. Impacts would be less than significant.

**Migratory Birds.** Direct and indirect impacts to avian species may occur during project operation and maintenance through individual collisions with project facilities and equipment including transmission wires, fencing, array structures, and heavy equipment. Such risks are commonplace with most human development activities. Factors that determine the risk of avian collisions with man-made structures include the size, height, and specific attributes of structures (guy wires and lighting/light attraction). Other factors include the siting in high-risk areas, frequency of inclement weather, type of development, and the species at potential risk. Such collisions can result in injury or mortality of avian species from electrocution, including in the case of power lines. Collisions with project facilities and equipment would be considered a potentially significant impact under CEQA.

As discussed previously, solar panels have the potential to create a lake effect, potentially resulting in avian impacts from collisions, stranding, or other forms of distress. Solar panels can be designed to minimize glare and spectral highlighting and minimize or avoid potential direct impacts caused by the lake effect as described in Mitigation Measure MM 4.1-5, provided in Section 4.1, *Aesthetics*, of this EIR. In order to determine if the operational phase of the project is resulting in a significant amount of avian mortality, a monitoring program would be implemented, as described in Mitigation Measure MM 4.4-10. The program would monitor avian mortality at the project site during operations and maintenance and provide quarterly

reporting and adaptive management recommendations to reduce the possible level of avian mortality to less-than-significant levels.

#### Decommissioning

Upon decommissioning of the project after approximately 35 years, the project site would be disturbed, devoid of native habitat, and have compacted soil from years of vehicle traffic. The post-project condition of the project site as a result of project construction and operation would be different than pre-project conditions. If special-status species have recolonized the project site during operation, decommissioning could impact these species. However, Mitigation Measures MM 4.4-1 through MM 4.4-9 and MM 4.4-10 require methods designed to reduce wildlife mortality and impacts as well as other sensitive biological resources, promote long-term project site suitability and educate onsite personnel. Implementation of these mitigation measures during the decommissioning period would reduce potentially significant impacts to special-status wildlife and plant species to less than significant.

### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.1-4, MM 4.1-5, MM 4.3-1, MM 4.3-2, MM 4.3-6, and MM 4.9-2 would be required (see Sections 4.1, *Aesthetics*; 4.2, *Air Quality*; and 4.9, *Hazard and Hazardous Materials*, for full mitigation measure text).

- **MM 4.4-1:** Prior to the issuance of grading or building permits from the County, the project proponent/operator shall retain a qualified biologist(s) who meets the qualifications of an authorized biologist as defined by U.S. Fish and Wildlife Service to oversee compliance with protection measures for all listed and other special-status wildlife species that may be affected by the construction operation, and decommissioning of the project. The following measures pertain to qualified biologists on site:
  - a. The qualified biologist(s) shall be on the project site during construction of perimeter fencing, clearing of vegetation, grading activities, and similar ground-disturbance activities that will be associated with the construction phase.
  - b. The qualified biologist(s) shall have the right to halt activities that are in violation of the special-status species mitigation measures, as well as any regulatory permits from the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife, if applicable. Work shall proceed only after hazards to special-status species are removed and the species is no longer at risk, or at the qualified biologist's discretion.
  - c. The qualified biologist(s) shall maintain a copy of applicable permits and biology-related plans on the project site.
  - d. The qualified biologist(s) shall have in her/his possession a copy of all the mitigation measures while work is being conducted on the project site.
  - e. Prior to issuance of grading or building permits, contact information for the qualified biologist(s) shall be submitted to the Kern County Planning and Natural Resources Department.
  - f. Individuals involved in biological monitoring shall be supervised by the qualified biologist(s) and shall have the appropriate experience to accomplish biological monitoring. Biological monitors shall comply with the above measures.

**MM 4.4-2:** Prior to the issuance of grading or building permits and for the duration of construction activities, and within a minimum of one week of initial ground disturbance at the project site, staging areas and/or transmission corridors, all construction workers shall attend a Worker Environmental Awareness Training and Education Program that will be developed by a qualified biologist. The Worker Environmental Awareness Training and Education Program will be developed and presented by a qualified biologist(s) or designee approved by the qualified biologist(s) and may be conducted in person or via videotape or other electronically recorded media.

Any personnel associated with construction that did not attend the initial Worker Environmental Awareness Training and Education Program training shall have Worker Environmental Awareness Training and Education Program training. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training and Education Program prior to starting work on the project and on an annual basis.

Onsite employees responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training and Education Program prior to operations or decommissioning. The Worker Environmental Awareness Training and Education Program will be developed and presented by a qualified biologist(s) or designee approved by the qualified biologist(s). The Worker Environmental Awareness Training and Education Program shall include the components described below.

- a. Information on the life history and identification of the blunt-nosed leopard lizard, burrowing owl, California condor, raptor species, San Joaquin kit fox and American badger; as well as other wildlife, special-status plant species, and the California Department of Fish and Wildlife–regulated drainages that may be affected during construction activities. The Worker Environmental Awareness Training and Education Program shall also discuss the legal protection status of each species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements. The Worker Environmental Awareness Training and Education Program shall also discuss the measures outlined in Mitigation Measure MM 4.4-4 though MM 4.4-10.
- b. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education Program has been completed shall be kept on file on site.
- c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education Program and signed acknowledgement forms shall be submitted to the Kern County Planning and Natural Resources Department.
- d. A copy of the training transcript, training video or informational binder for specific procedures shall be kept available for all personnel to review and be familiar with as necessary.

- e. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education Program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.
- **MM 4.4-3:** During construction, and decommissioning, the project proponent/operator and/or contractor(s) shall implement the general avoidance and protective measures described below.
  - a. Prior to conducting vegetation clearing or grading activities associated with construction or decommissioning, a qualified biologist or biological monitor that has been approved by the qualified biologist shall perform pre-construction visual surveys of the area immediately prior to conducting these activities to ensure that no special-status animals are present. The qualified biologist or biological monitor shall monitor all initial construction and decommissioning ground disturbance activities. A report of those activities shall be submitted to the Kern County Planning and Natural Resources Department within 30 days of completion of activities.
  - b. Sensitive biological resources (i.e., special-status species, jurisdictional drainages, nesting birds, etc.) within proposed impact areas, including solar fields, generator-tie lines, staging areas, access routes, and areas of disposal or temporary placement of spoils shall be delineated with stakes and/or flagging prior to construction to avoid sensitive biological resources where possible. Construction-related activities outside of the planned impact areas shall be avoided.
  - c. Access roads that are planned for use during construction shall not extend beyond the planned impact area. All vehicle traffic shall be contained within the planned impact areas or in previously disturbed areas. Where new access routes are required, the route will be clearly marked (i.e., flagged and/or staked) prior to construction.
  - d. The project proponent/operator shall minimize the areas of disturbance. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. These areas shall be demarcated and disturbance activities, vehicles, and equipment shall be confined to these areas.
  - e. Spoils shall be stockpiled in disturbed areas that lack native vegetation to the maximum extent practicable. Best Management Practices shall be employed to prevent erosion in accordance with the project's approved Stormwater Pollution Prevention Plan (see Section 4.7, *Geology and Soils*, for more details on Stormwater Pollution Prevention Plan requirements). All detected erosion shall be remedied as described in the Erosion Control Plan of the Stormwater Pollution Prevention Plan. Spoils that have been stockpiled and inactive for greater than 10 days shall be inspected by a qualified biologist for signs of special-status wildlife before moving or disturbing the spoils.
  - f. To prevent inadvertent entrapment of San Joaquin kit foxes, American badgers, or other animals during construction, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered with plywood or similar materials at the close of each working day, or provided with one or more escape ramps constructed of earth fill or wooden planks that are no less than 12 inches wide and secured at the top, and placed

a minimum of every 100 feet within the open trench. Covered and non-covered holes or trenches shall be thoroughly inspected for trapped animals by a qualified biologist or their biological monitor at the beginning and end of each day. Immediately before such holes or trenches are filled, they shall again be thoroughly inspected by trained staff approved by the retained qualified biologist for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow for their escape. If a listed species is trapped, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife, as appropriate for the species, and Kern County Planning and Natural Resources Department shall be contacted immediately.

- g. San Joaquin kit fox, burrowing owls, mammals, and nesting birds may use construction pipes, culverts, or similar structures for refuge or nesting. Therefore, all construction pipes, culverts, or similar structures with a diameter of 4 inches or more that are stored at the construction site for one or more overnight periods, and without endcaps, shall be thoroughly inspected by a qualified biologist or the designated biological monitor for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until a qualified biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by a qualified biologist holding the appropriate handling permits from the Resource Agencies.
- h. No vehicle or equipment parked on the project site shall be moved prior to inspecting the ground beneath the vehicle or equipment for the presence of wildlife. If present, the animal shall be left to move on its own.
- i. Vehicular traffic to and from the project site shall use existing routes of travel. Cross country vehicle and equipment use outside designated impact areas shall be prohibited.
- j. A speed limit of 15 miles per hour shall be enforced within the limits of the project. If night work occurs on the project, the speed limit will be 10 miles per hour.
- k. Fueling of equipment shall take place within existing roads. No refueling within or adjacent to drainages (within 150 feet) shall be permitted. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary.
- 1. The project proponent/operator shall submit a Maintenance, Trash Abatement, and Pest Management Program to the Kern County Planning and Natural Resources Department for review and approval. The Maintenance, Trash Abatement, and Pest Management Program shall include, but not be limited to the following:
  - i. The project proponent/operator shall clear debris from the project area at least twice per year once the project is operational; this can be done in conjunction with regular panel washing and site maintenance activities.
  - ii. Trash and food items shall be contained in closed containers to be locked at the end of the day and removed at least once per week to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, and feral dogs.

- iii. The project proponent/operator shall erect signs with contact information for the project proponent/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff shall respond within two weeks to resident requests for additional cleanup of debris. Correspondence with such requests and responses shall be submitted to the Kern County Planning and Natural Resources Department.
- iv. The project proponent/operator shall implement a regular trash removal and recycling program once per month on an ongoing basis during construction, including a recycling program. Barriers/locking systems to prevent pest/rodent access to food waste receptacles shall be implemented. Locations of all trash receptacles during operation of the project shall be shown on final plans.
- m. Workers shall be prohibited from bringing pets and firearms to the project site and from feeding wildlife.
- n. Intentional killing or collection of any plant or wildlife species shall be prohibited.
- o. No rodenticides shall be used on the project site.
- p. Perimeter fencing during operations shall be made wildlife friendly by raising the bottom up 5 to 7 inches from the ground and knuckling back the bottom edge to allow movement of San Joaquin kit fox.
- **MM 4.4-4:** The project proponent/operator shall implement the following measures to ensure potential impacts to California condor resulting from project implementation and decommissioning activities will be avoided or minimized to less-than-significant levels:

If condors are observed landing in or near the construction site, construction within 500 feet of the sighting will cease until the bird(s) have left the area, or as otherwise authorized by the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife. Should U.S. Fish and Wildlife Service notify the project team that condors are roosting within 0.5 miles of the construction area, no construction activity shall occur between 1 hour before sunset to 1 hour after sunrise or until the condors leave the area, or as otherwise directed by the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife will be notified with 24 hours of an encounter with a California condor within the disturbance zone and a 200-foot buffer around.

**MM 4.4-5:** 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 more than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading, tilling, trenching, installation of piles, etc.) and again within 24-hours of starting ground disturbing activities associated with construction and decommissioning activities. The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife 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. Specifics on avoidance buffers for occupied burrows during the breeding and non-breeding periods are as follows.

- a. A qualified wildlife biologist shall be on site during all initial grading and construction, pre-construction ground disturbing activities, and decommissioning activities. A qualified wildlife biologist (i.e., a wildlife biologist with the ability to identify the species and possessing previous burrowing owl survey and avoidance and minimization protection experience) shall conduct pre-construction surveys of all areas that will be permanently or temporary impacted, plus a 200-meter (approximately 656-foot) buffer, to locate active breeding or wintering burrowing owl burrows.
- b. The survey(s) shall occur no more than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading) or decommissioning. The survey methodology shall be consistent with the methods outlined in the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting and mapping any potential burrows with burrowing owl signs or presence of burrowing owls.
- c. As each burrow is investigated, project biologists shall also look for signs of American badger and desert kit fox. A biologist shall prepare a preconstruction survey report that shall be submitted to California Department of Fish and Wildlife and the Kern County Planning and Natural Resources Department.
- d. A qualified biologist shall conduct an additional preconstruction survey of all impact areas plus an approximately 200-meter buffer no more than 24 hours prior to start or restart of ground disturbing activities associated with construction or decommissioning activities as authorized by this approval to identify any additional burrowing owls or burrows necessitating avoidance, minimization, or mitigation measures.
- e. If burrowing owls are detected onsite, no ground-disturbing activities shall be permitted within 200 meters of an occupied burrow during the breeding season (February 1–August 31), unless authorized by California Department of Fish and Wildlife. During the non-breeding season (September 1–January 31), no ground-disturbing activities shall be permitted within 50 meters (165 feet) of an occupied burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with California Department of Fish and Wildlife.
- f. If burrow avoidance is infeasible during the non-breeding season or during the breeding season where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with Appendix E (i.e., Example Components for Burrowing Owl Artificial Burrow and Exclusion Plans) of the 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation.
- g. If passive relocation is required, the qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and Mitigation Land Management Plan in accordance with 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation. The Mitigation Land Management Plan shall include a requirement for the

permanent conservation of offsite Burrowing Owl Passive Relocation Compensatory Mitigation Land.

- h. If passive relocation is required, the project proponent shall implement the Mitigation Land Management Plan and permanently conserve in a conservation easement offsite habitat suitable for burrowing owl at ratio of 15 acres per passively relocated burrowing owl pair, not to exceed the size of the final project footprint. Land identified to mitigate for passive relocation of burrowing owl may be combined with other offsite mitigation requirements of the project if the compensatory habitat is deemed suitable to support the species. The Passive Relocation Compensatory Mitigation habitat shall be approved by California Department of Fish and Wildlife. If the project is located within the service area of a California Department of Fish and Wildlife-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits in lieu of placing offsite habitat into a conservation easement, if acceptable to California Department of Fish and Wildlife.
- **MM 4.4-6:** The project proponent/operator shall implement the following measures to ensure potential impacts to San Joaquin kit fox resulting from project implementation and decommissioning activities will be avoided and minimized to less-than-significant levels:
  - a. Pre-construction surveys shall be conducted within the disturbance zone and a 200foot buffer around the disturbance zone in suitable habitat within 14 days prior to the beginning of each construction area of grading or construction activity. Preconstruction surveys will identify San Joaquin kit fox habitat features on the project site and evaluate use by San Joaquin kit fox. The status of all possible San Joaquin kit fox dens will be categorized as a potential, atypical, known, or pupping den type and will be mapped. The results of these surveys shall be submitted to the County and resource agencies (as required) within 5 days of survey completion and prior to commencement of ground disturbance and/or construction activities.
  - b. Biological monitor should be present while ground disturbing activities are occurring in suitable habitat if the preconstruction survey indicates that San Joaquin kit fox may be present. If San Joaquin kit fox dens are present, appropriate buffers will be established with highly visible markers according to the buffer distances, as described below by den type prior to construction activities:
    - i. San Joaquin kit fox potential or atypical den: If a potential or atypical den is found, placement of four or five flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required but the 50-foot exclusion zone must be observed. Essential vehicle operation on existing roads and foot traffic is permitted within the exclusion zones, but the speed limit shall be 15 miles per hour within the exclusion zone.
    - ii. San Joaquin kit fox known den: If a known den is found, a 100-foot exclusion zone shall be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by San Joaquin kit fox. Acceptable fencing includes untreated wood particleboard, silt fencing, orange construction fencing, or other fencing as long as it has openings for San Joaquin kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be

maintained until all construction-related disturbances have ceased, or until the den has been monitored and a lack of San Joaquin kit fox activity is documented, as described under Den Excavation, below. At that time, all fencing shall be removed to avoid attracting post- construction attention to the dens, or the den can be excavated as described under Den Excavation, below.

- c. San Joaquin kit fox natal/pupping den: If a San Joaquin kit fox natal/pupping den is documented during pre-construction surveys, a 200-foot exclusion zone shall be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by San Joaquin kit fox. Acceptable fencing includes untreated wood particleboard, silt fencing, orange construction fencing, or other fencing as long as it has openings for San Joaquin kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction-related disturbances have ceased, or until the den has been monitored and a lack of San Joaquin kit fox activity is documented, as described under Den Excavation, below. At that time, all fencing shall be removed to avoid attracting post-construction attention to the dens, or the den can be excavated.
- d. Buffer distances and measures can be modified with prior authorization from U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.
- e. Den Excavation: Based on the results of the pre-construction surveys, if avoidance of dens is not a reasonable alternative, limited destruction of San Joaquin kit fox dens may be allowed. Dens shall be fully excavated, filled with dirt, and compacted so that San Joaquin kit fox cannot reenter the den during the construction period. Hand excavation shall be used whenever feasible. If at any point during the excavation a San Joaquin kit fox is discovered inside the den, the excavation activity shall cease immediately, and the den shall be monitored as described below. Destruction of the den may be completed when, in the judgment of the project Lead Biologist, the animal has escaped without further disturbance. Excavation of dens shall be conducted under the supervision of biologist, in accordance with U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox prior to or during Ground Disturbance.
  - i. Absolutely no excavation of San Joaquin kit fox known dens shall occur without prior authorization from the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife. Destruction of any known or natal/pupping San Joaquin kit fox den requires take authorization from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.
  - ii. Natal/pupping dens: Natal/pupping dens that are occupied will not be destroyed until the pups and adults have vacated and consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife has occurred.
  - iii. Known dens: Known dens within the project footprint must be monitored for 3 days/nights using a tracking medium or infrared camera stations to determine the current use. If no San Joaquin kit fox activity is observed during this period, the den shall be destroyed immediately to prevent future use. If San Joaquin kit fox activity is observed at the den, then the den shall be monitored for at least 4 consecutive days from the time of observation to allow any resident animal to

move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging the entrance(s) with soil in such a manner that any resident animal can escape easily. Once the den is determined to be unoccupied, then the den may be excavated. If the animal is still present after 4 or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of the project Lead Biologist, it is temporarily vacant; for example, during the animal's normal foraging activities.

- iv. Potential/atypical dens: If a take authorization/permit has been obtained from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife, destruction of potential and atypical dens may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential and atypical dens should be monitored as if they were known dens. If any den was considered to be a potential or atypical den, but is later determined during monitoring or destruction to be currently or previously used by San Joaquin kit fox (e.g., if San Joaquin kit fox sign is found inside), then all construction activities shall cease and the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife shall be notified immediately.
- f. To prevent inadvertent entrapment of San Joaquin kit fox 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 by plywood or similar materials or, or be provided with one or more escape ramps constructed of earth fill or wooden planks (wooden planks should be no less than 10 inches in width and should reach to bottom of trench and be installed at 1:1 slope). Before such holes or trenches are filled, they shall be thoroughly inspected for trapped San Joaquin kit fox.
- g. Construction materials will not be stacked in a manner that allows San Joaquin kit fox to establish den sites within the material. Construction items such as solar panel and equipment transported to the project on pallets will be placed directly on the ground, and the pallets removed from the site. All 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 San Joaquin kit fox before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If San Joaquin kit fox is discovered inside a pipe, the project biologist shall flush the species from the pipe. If San Joaquin kit fox is discovered, that section of pipe shall not be moved until the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife has been consulted. If necessary, under the direct supervision of the project biologist, the pipe may be moved once to remove it from the path of construction activity until the species has escaped.
- h. Unless biological monitors allow alterations to routes, all project vehicles should be confined to existing roads or prominently staked and/or flagged access routes that are surveyed prior to use.
- i. Speed limits should be restricted to 15 miles per hour during daylight hours (5 am to 9 pm) and 10 miles per hour during night-time hours on the site and 25 miles per hour on public roads in the vicinity during both day and night-time driving.

- j. Project will be constructed with appropriate kit fox-friendly standards, which includes fencing plan that will allow require kit-fox permeable fencing surrounding the site so that kit foxes can to pass through the project site. There will be no mass grading of the site.
- **MM 4.4-7:** The project proponent/operator shall implement the following measures to ensure potential impacts to blunt-nosed leopard lizard resulting from project implementation and decommissioning activities will be avoided and minimized to less-than-significant levels:

Prior to grading, the project proponent shall conduct appropriate pre-construction surveys as identified below to avoid impacts to blunt-nosed leopard lizard.

- a. All activities that will result in permanent or temporary ground disturbances should be preceded by a pre-construction survey within 14 days of construction by a qualified biologist(s). In addition, an additional pre-construction survey completed within 24 hours to the onset of construction will be conducted. The biologist(s) should identify and clearly mark the location of areas where any blunt-nosed leopard lizard were observed. If a blunt-nosed leopard lizard is observed within the project site, U.S. Fish and Wildlife Service and California Department of Fish and Wildlife will be contacted to establish avoidance measures. If construction stops for longer than 2 weeks, a pre-construction survey will need to be conducted prior to construction starting again.
- b. A biological monitor(s) should be present while ground disturbing activities are occurring if the preconstruction survey indicates that blunt-nosed leopard lizard may be present. In addition to conducting preconstruction surveys, the biological monitors should aid crews in implementing/installing take avoidance measures for blunt-nosed leopard lizard and implementing project avoidance and mitigation measures. Biological monitors are empowered to order cessation of activities if an immediate threat of "take" is identified, if take avoidance and/or mitigation measures are violated, or if a blunt-nosed leopard lizard is located within the construction area.
- c. To prevent inadvertent entrapment of blunt-nosed leopard lizard, open holes, steepwalled holes, or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks (wooden planks should be more no less than 10 inches in width and should reach to bottom of trench and be installed at a 1:1 slope). Before such holes or trenches are filled, they should be thoroughly inspected by a biological monitor for trapped animals.
- d. A project representative will be appointed who will be the contact source for any employee or contractor who inadvertently kills or injures a blunt-nosed leopard lizard or who finds a dead, injured, or entrapped individual blunt-nosed leopard lizard. The representative will be identified in the Worker Environmental Awareness Training and Education Program. U.S. Fish and Wildlife Service and California Department of Fish and Wildlife will be contacted immediately in the case of a dead, injured, or entrapped blunt-nosed leopard lizard by the chosen representative.
If blunt-nosed leopard lizard are detected during any identified survey of the project site, the following provisions will be implemented.

- a. If blunt-nosed leopard lizard are observed within 50 feet of proposed disturbance areas during the clearance surveys, exclusion fencing shall be installed in such a manner as to segregate blunt-nosed leopard lizard from the construction and to ensure that direct take of the species does not occur. The actual distance from the construction area where exclusion fencing is installed may depend on each construction site, but the fencing will be installed at a maximum 50-foot radius from the outermost edge of the construction impact zone, directed by the authorized biologist. The project biologist shall be on site during the fencing installation to ensure that no blunt-nosed leopard lizard are inadvertently harmed/harassed during installation.
- b. Fencing shall provide escape routes from excluded construction areas to areas beyond the construction work area to enable blunt-nosed leopard lizard to move outside the excluded area away from construction activities. The fencing escape routes shall be closed to prevent blunt-nosed leopard lizard from reoccupying the area prior to commencing earth-disturbing activities. The fenced zone can be expanded in the project site, as necessary and following the same survey and escape route protocol described above, to exclude individual blunt-nosed leopard lizard from construction zones.
- c. If blunt-nosed leopard lizard are observed or suspected (based on scat, tail drag marks, or other sign) of occurring within a fenced construction zone during the exclusion zone surveys, daily surveys shall be conducted for another consecutive 5 days from the date of the observation to allow sufficient time for individual blunt-nosed leopard lizard to vacate the excluded area.
- **MM 4.4-8:** The project proponent/operator shall implement the following measures to ensure potential impacts to American badger resulting from project implementation and decommissioning activities will be avoided and minimized to less-than-significant levels:
  - a. All activities that will result in permanent or temporary ground disturbances shall be preceded by a preconstruction survey conducted by a biological monitor within 14 days prior to the beginning of each construction area of grading or construction activity. The biologist(s) should identify and clearly mark the location(s) of areas where potential badger den(s) was/were identified. The surveys should be conducted in parallel transects spaced 30 feet apart.
  - b. It may be determined that a biological monitor(s) should be present while ground disturbing activities are occurring based on the sensitivity of the habitat. All known or occupied badger dens should be identified by highly visible flagging and avoided by a buffer with a radius determined by a biological monitor.
  - c. If one or more badger dens are found during the pre-activity survey, the following steps will be taken:
    - i. The den will be carefully inspected to evaluate its activity status. If the biologist is uncertain about the activity status of a den, a tracking medium (such as diatomaceous earth) should be placed in front of the den for 3 consecutive nights. The tracking medium should be checked each following morning for tracks.

- ii. If no tracks are observed after three nights of monitoring, the den can be considered to be inactive. It should be completely excavated with hand tools until it is certain that no badgers are inside. When excavation is completed, the den should be backfilled and compacted to ensure that no badgers can re-enter the den during construction. If at any point during the excavation a badger is discovered inside the den, excavation should stop until the badger has been allowed to move away. Excavation should either be done by a qualified biologist or under the supervision of a qualified biologist.
- d. If the den is active, it should be monitored for an additional five consecutive nights to allow badgers using the den to move to another den. The badger can be discouraged from continued use of the den by partially blocking the den entrance with soil. The soil should be placed in front of the den in such a manner that the resident badger is able to escape easily. When, in the judgement of the biologist, the badger has moved from the den, it should be excavated as explained above.
- **MM 4.4-9:** To mitigate for potential impacts to nesting birds, special-status birds, and birds protected under the Migratory Bird Treaty Act and California Fish and Game Code during construction and decommissioning activities, the following measures shall be implemented as part of the approval for a grading or building permit.
  - a. During the avian nesting season (February 1–August 31), a qualified biologist shall conduct a preconstruction avian nesting survey no more than 7 days prior to initial vegetation clearing. Surveys need not be conducted for the entire project site at one time; they may be phased so that surveys occur within 7 days prior to clearing or disturbance in specific areas of the site. The surveying biologist must be qualified to determine the species, status, and nesting stage without causing intrusive disturbance. At no time shall the biologist be allowed to handle active nest or its eggs. The survey shall cover all reasonably potential nesting locations on and within 500 feet of the project site, including ground nesting species, such as western meadowlark, nests in shrubs that could support nests, and suitable raptor nest sites such as nearby trees and power poles. Access shall be granted on private offsite properties prior to conducting surveys on private land. If access is not obtainable, the biologist shall survey these areas from the nearest vantage point with use of spotting scopes or binoculars.
  - b. If construction is scheduled to occur during the non-nesting season (September 1– February 1), no preconstruction surveys or additional measures are required for nonlisted avian species.
  - c. If construction begins in the non-nesting season and proceeds continuously into the nesting season, no surveys are required for non-listed avian species so long as all suitable nesting sites have been cleared from active construction/decommissioning areas.
  - d. If active nests are found, a 100-foot no-disturbance buffer shall be created around nonlisted avian species' nests unless adjusted by the qualified biologist based on the needs and sensitivities of individual species, and a 300-foot no-disturbance buffer around raptor species' nests (or a suitable distance otherwise determined in consultation with California Department of Fish and Wildlife). Any nest of a federal- or state-listed bird species shall

require consultation with the appropriate agency (U.S. Fish and Wildlife Service or the California Department of Fish and Wildlife) to determine the appropriate buffer distance surrounding the nest to provide adequate nest protection. These buffers shall remain in effect until a qualified wildlife biologist has determined that the birds have fledged or the project component(s) have been redesigned to avoid the area. All no-disturbance buffers shall be delineated in the field with visible flagging or fencing material.

- **MM 4.4-10:** During the operations and maintenance phase of the project, an Avian Mortality Monitoring Program shall be developed in coordination with the project Lead Biologist and implemented to systematically and periodically determine the extent of mortality occurring due to collisions with solar arrays. The measures listed below apply to the Avian Mortality Monitoring Program:
  - a. The Avian Mortality Monitoring Program shall be developed following the Mortality Monitoring Design for Utility-Scale Solar Power Facilities and include methods to achieve Objective 1 (monitoring to estimate total bird and bat mortality). Methods include using a trained and skilled team of authorized biologists to systematically sample the project site by walking transects through the solar arrays scanning for deceased birds.
  - b. Data shall be collected on any encountered deceased wildlife species including species, condition of the carcass, approximate age, presence of feathers, etc.
  - c. Additionally, maintenance personnel working on the project site that encounter injured or deceased birds (or any other wildlife) should be trained to collect data and photograph the encountered species.
  - d. Mortality monitoring shall be conducted for a minimum 1-year period following the commencement of the operations and maintenance phase of the project. Quarterly reporting of results shall be prepared and provided to state and federal agencies, if requested.
  - e. Appropriate performance standards for mitigation of impacts to any species regulated by the Bald and Golden Eagle Protection Act, Endangered Species Act, and California Endangered Species Act exist through required consultation with U.S. Fish and Wildlife Service and California Department of Fish and Wildlife under their respective regulatory and permitting frameworks. If, after 2 years of mortality monitoring, project impacts to any other avian species caused by the project are shown to result in a substantial, long-term reduction in the demographic viability of the population of the species in question, then adaptive management must be implemented to reduce impacts to below this threshold. Adaptive management measures may include but not be limited to passive avian diverter installations, the use of sound, light or other means to discourage site use consistent with legal requirements, on site habitat management or control measures consistent with applicable legal requirements, or modification to support structures to exclude nesting birds.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-10, MM 4.1-4, MM 4.1-5, MM 4.3-1, MM 4.3-2, MM 4.3-6, and MM 4.9-2 impacts would be less than significant.

# 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.

Sensitive natural communities and riparian habitats are absent from the project site. Wild oats grassland, a non-native upland community that is not ranked by CDFW and is not a sensitive natural community, was the only natural community recorded on the project site. Project implementation would not result in removal of a sensitive natural community or riparian habitat removal. The project would have no impact on sensitive natural communities or riparian habitat.

Three potentially jurisdictional drainages were identified along the gen-tie portion of the project site and included Pastoria Creek, Cattle Creek and a distributary channel. Potentially jurisdictional features located within the solar field portion of the project site included one agricultural ditch, one potentially jurisdictional, one dormant distributary channel and three upland swales. These features are potentially subject to RWQCB and/or CDFW jurisdiction with the exception of the three upland swales which were concluded to lack RWQCB and CDFW jurisdiction. Because the features identified all drain to inland areas of California and are non-navigable, isolated waterways, the USACE is not expected to assert jurisdiction over the features.

Construction activities from the project could permanently and/or temporarily impact these potentially jurisdictional features as a result of grading and construction of the gen-tie line. The results of the site surveys were taken into consideration for project design, and direct impacts to all of the potentially jurisdictional features will be avoided by project features. Therefore, direct impacts to areas under the jurisdiction of RWQCB or CDFW are unlikely, though indirect impacts may occur. Implementation of Mitigation Measures MM 4.4-11, MM 4.4-12, and MM 4.7-3 shall ensure impacts to potential jurisdictional are avoided and minimized to the greatest extent possible. Mitigation Measure MM 4.4-12 shall ensure that the appropriate agency-required permits are issued for the project prior to work in jurisdictional features. With implementation of these measures, impacts to jurisdictional resources would be less than significant during construction.

#### Mitigation Measures

Implementation of Mitigation Measure MM 4.7-3 would be required (see Section 4.7, *Geology and Soils*, for full mitigation measure text).

- **MM 4.4-11:** Prior to issuance of any grading or building permit, the project proponent/operator shall submit a report detailing how all identified ephemeral drainages are avoided and will be continually complied with during the life of the project. A copy of this report shall also be provided to the Central Valley Regional Water Quality Control Board and the Kern County. Public Works Department Floodplain Management Division. The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:
  - Potential jurisdictional features (ephemeral drainages, drainage ditch, dormant channel, and upland swales) identified in the jurisdictional delineation report shall be avoided. This may be shown in plan form. A 50-foot buffer will be delineated and flagged for avoidance during project activities adjacent to potential jurisdictional features.
  - b. Any material/spoils generated from project activities shall be located away from jurisdictional areas and protected from stormwater 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. Fuel or hazardous materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and be placed generally at least 50 feet from the top of bank.
- d. Any spillage of fuel or hazardous material will be stopped if it can be done safely. The contaminated area will be cleaned and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative will be notified.
- **MM 4.4-12:** Prior to project construction, a jurisdictional delineation report shall be prepared that describes jurisdictional resources and the extent of jurisdiction under the U.S. Army Corps of Engineers, Central Valley Regional Water Quality Control Board and California Department of Fish and Wildlife.

If it is determined by the jurisdictional delineation report, that all jurisdictional features are avoided no further action is required. If it is determined during final siting that jurisdictional resources cannot be avoided, the project applicant shall be subject to provisions (1-3) as identified below:

- a. The project proponent/operator shall complete a Report of Waste Discharge with the Central Valley Regional Water Quality Control Board to obtain Waste Discharge Requirements and shall also consult with California Department of Fish and Wildlife on the need for a streambed alteration agreement. Copies of the final report shall be submitted to the County.
- b. Based on consultation with Central Valley Regional Water Quality Control Board and California Department of Fish and Wildlife, 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 Central Valley Regional Water Quality Control Board or California Department of Fish and Wildlife 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 Central Valley Regional Water Quality Control Board and/or California Department of Fish and Wildlife, shall be provided to the County.
- e. A Habitat Mitigation and Monitoring Plan shall be prepared that outlines the compensatory mitigation in coordination with the Central Valley Regional Water Quality Control Board and California Department of Fish and Wildlife.
  - i. If onsite mitigation is proposed, the Habitat Mitigation and Monitoring Plan 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 Habitat Mitigation and Monitoring Plan 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 Habitat Mitigation and Monitoring Plan 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 Central Valley Regional Water Quality Control Board and California Department of Fish and Wildlife shall be provided to the Kern County Planning and Natural Resource Department.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-11, MM 4.4-12, and MM 4.7-3 impacts would be less than significant.

# Impact 4.4-3: The project would have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

As described in Impact 4.4-2, two ephemeral drainages were identified within the project site. Three potentially jurisdictional diffuse drainage channels were identified within the solar field portion of the project site. Isolated waters within the Central Valley Region having no connection to navigable waters, including those on the project site, are not considered "waters of the United States" and, therefore, are not be subject to regulation under the federal Clean Water Act (CWA). In addition, no areas were identified on the project site that exhibit characteristics of wetlands as defined by USACE. Therefore, the project would have no impact on federally protected wetlands or waters.

#### Mitigation Measures

No mitigation would be required.

#### Level of Significance after Mitigation

No impact.

# Impact 4.4-4: The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

There are no perennial water features on the project site, and therefore no potential corridors for aquatic species. In addition, no wildlife nursery sites have been identified on or in the vicinity of the project site. The project site is not located within a known wildlife migratory corridor. Although the project would introduce structures to the project site that would physically impede wildlife movement in certain areas and directions, the agricultural lands in the area of the project, as well as the areas to the south which are mainly native vegetation communities with scattered unpaved roads and residences, provide for largely unrestricted wildlife movements through natural or semi-natural habitats. Therefore, project features that would

potentially restrict wildlife movement represent a very small fraction of area available for wildlife movement in the surrounding area. A significant impact would occur if passage is restricted for the San Joaquin kit fox. Post-construction fencing, as described in Mitigation Measure MM 4.4-13, would allow wildlife movement into and out of the project site, maintaining connectivity. Implementation of Mitigation Measure MM 4.4-13 would accommodate the passage of San Joaquin kit fox and other small mammals through the site. Therefore, implementation of the project would not restrict local or regional wildlife movement with the implementation of Mitigation Measure MM 4.4-13 and impacts would be less than significant.

Lighting from the project site could potentially affect movement of wildlife around the project site. However, all lighting installed as a part of the project would comply with the Kern County Dark Skies Ordinance and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties, as stipulated in Mitigation Measure MM 4.1-4, provided in Section 4.1, *Aesthetics*, of this EIR. This would help reduce impacts to wildlife moving through the area. Therefore, the project is not expected to adversely impact wildlife movement and impacts would be less than significant.

#### **Mitigation Measures**

Implementation of Mitigation Measure MM 4.1-4 would be required (see Section 4.1, *Aesthetics*, for full mitigation measure text), and;

MM 4.4-13: The project site shall be fenced to keep terrestrial wildlife species from entering the project site during construction, but will provide openings post-construction to enable wildlife to move freely through the project site during operation (e.g., create 4- to 7-inch portals or openings in the fence raising the fence 7 inches above the ground and knuckling the bottom of the fence [i.e., wrapping the fencing material back to form a smooth edge] to protect wildlife passing underneath). This fencing shall be constructed of slit fence material, metal flashing, plastic sheeting, or other materials that will prohibit wildlife from climbing the fence or burrowing below the fence. The fencing shall extend a minimum of 30 inches above grade. Fencing shall be installed prior to issuance of grading or building permits and shall be maintained during all phases of construction and decommissioning. The fencing shall be inspected by a qualified biologist at a regular interval and immediately after all major rainfall events through the duration of construction and decommissioning activities. Any needed repairs to the fence shall be performed on the day of their discovery. Outside temporarily fenced exclusion areas, the project operator shall limit the areas of disturbance. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. These areas shall be flagged and disturbance activities, vehicles, and equipment shall be confined to these flagged areas.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-13 and MM 4.1-4, impacts would be less than significant.

# Impact 4.4-5: The project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The Kern County General Plan is the only local policy or ordinance protecting biological resources on the project site. As discussed under Impacts 4.4-1 through 4.4-6, biological resources identified in the general plan shall be protected in accordance with State and Federal Laws including CEQA. Mitigation Measures MM 4.4-1 through MM 4.4-13 shall protect biological resources identified for protection with the Kern County General Plan. In addition, lighting from the project site could potentially affect wildlife around the project site. All lighting installed as a part of the project would comply with the Kern County Dark Skies Ordinance and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties as stipulated in Mitigation Measure MM 4.1-4, provided in Section 4.1, *Aesthetics*, of this EIR. Thus the project would not be in conflict with local policies or ordinances protecting biological resources.

#### Mitigation Measures

Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 and MM 4.1-4 would be required (see Section 4.1, *Aesthetics*, for full mitigation measure text).

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 and MM 4.1-4, 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.

There is no adopted habitat conservation plan, natural community conservation plan or other approved local, regional, or state habitat conservation plan protecting biological resources on the project site. The KCVFHCP is a proposed HCP and has not been approved by the County or resource agencies. Therefore, KCVFHCP does not constitute an adopted HCP and the project is not required to analyze conflicts with the KCVFHCP.

The project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

No impact.

# **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 4.4-1 through MM 4.4-13, as well as implementation of Mitigation Measures MM 4.1-5, MM 4.3-1, MM 4.3-2, MM 4.3-6, MM 4.7-3, and MM 4.9-2.

As large-scale energy projects and urbanization pressures increase within Kern County, impacts to biological resources within the region are expanding on a cumulative level. As described in Table 3-3, *Cumulative Projects List*, in Chapter 3, *Project Description*, of this EIR, other projects with similar species effects have been completed within the San Joaquin Valley. In general, bioregions are defined through physical and environmental features, including watershed boundaries and soil and terrain characteristics. Areas to the east and south of the Tehachapi Mountains, and to the west of the San Emigdio Mountains, are within a different bioregion and are separated from the project site by the natural geography that these ranges present. Interstate 5, SR-99 and the California Aqueduct, in the central and western portions of the southern San Joaquin Valley, also act as a barrier to wildlife movement.

As described above, there is one special-status species currently known for the project site and a number of special-status species that have the potential to occur on the project site and in the surrounding vicinity. Implementation of the project in addition to the other projects underway or proposed within Kern County would impact transient wildlife species, including burrowing owls, other raptors, and San Joaquin 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, many of which are expected to utilize the project site on a transient basis, if at all.

Given the number of present and reasonably foreseeable future development projects in the San Joaquin Valley, the project, when combined with other projects, would have an incremental contribution to cumulative loss of foraging and nesting habitat for special-status species. Implementation of Mitigation Measures would reduce the project's contribution to potential impacts to biological resources to less-than-significant levels on the project-level scale. However, the project, when combined with other related development projects proposed throughout the County, the cumulative impact would be significant and unavoidable.

The residual effects on migratory birds of the project were determined to be less than significant. This cumulative analysis analyzes the potential for these incremental impacts of the project to combine with other past, present, and reasonably foreseeable projects to cause or contribute to a significant cumulative effect within the Central Valley portion of the Pacific Flyway for the duration of the project. Identified cumulative projects that involve the installation of PV panels have the potential to cause impacts to migratory birds associated with collisions. Little is known about the potential for impacts to migratory birds associated with the "lake effect." However, significant impacts to migratory birds could occur due to collision with PV panels or other project structures causing mortality or injury. Further, as take authorization for migratory bird species is not available, any mortality of migratory birds would be considered significant under CEQA. Therefore, the project, in combination with all identified cumulative projects, would result in a cumulatively significant impact on migratory birds that may remain significant and unavoidable after implementation of mitigation.

#### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 as well as MM 4.1-4, MM 4.1-5, MM 4.3-1, MM 4.3-2, MM 4.3-6, MM 4.7-3 and MM 4.9-2 would be required (see Sections 4.1, *Aesthetics*, 4.3, *Air Quality*, 4.7, *Geology and Soils*, and 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).

## Level of Significance after Mitigation

Despite implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 as well as MM 4.1-4, MM 4.1-5, MM 4.3-1, MM 4.3-2, MM 4.3-6, MM 4.7-3 and MM 4.9-2, cumulative impacts would be significant and unavoidable to transient wildlife species, including burrowing owls, other raptors, San Joaquin kit fox, and migratory birds.

# 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 records search, cultural resources survey of the project site, and significance evaluation of identified resources.

This section is based on a cultural resources technical report entitled, *Cultural Resources Inventory of the Pastoria Solar Project, Kern County, California* (Jacobs, 2019) provided in Appendix E of this EIR. The report details the results of a cultural resources records search, field survey, and resource evaluations for the project, along with Native American Consultation conducted by County Staff in accordance with Assembly Bill (AB) 52. The report was prepared in compliance with Section 5024.1 of the California Public Resources Code (PRC) and CEQA to identify archaeological, historic built architectural, and other cultural resources in the project site. Due to the confidential nature of the location of cultural resources, information regarding locations of cultural resources has been removed from the report 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 a 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 resources 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 11,700 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 California Register or included in a local register of historical resources (PRC Section 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 is located in the southern San Joaquin Valley along the northern margin of the Tehachapi Mountains, within California's Central Valley, which extends from the Siskiyou Mountains in the north to the Tehachapi Mountains in the south and covers an area 450 miles long and 250 miles wide. The Central Valley is bound by the Cascade Ranges and Sierra Nevada Mountains in the east and the Coast Ranges in the west.

Historically, the Southern San Joaquin Valley supported large, shallow lakes, such as Tulare Lake, Kern Lake, and Buena Vista Lake, as well as associated wetlands. At the time, the valley supported a treeless plain with patches of alkali-tolerant annual forbs and grasses (Fagan, 2003; Jacobs, 2019). Dominant vegetation in the wetlands consisted of large growths of tules. In drier spots, sage, greasewood, and bunchgrass flourished. Trees, such as cottonwoods, sycamores, and willows, lined river channels and sloughs, but were absent from the valley floor (Jacobs, 2019). The wetlands supported a huge number of aquatic fowl, including migratory ducks and geese, as well as abundant fish, turtles, and freshwater mussels. Antelope, deer, and elk wintered on the plains. Other wildlife included jackrabbits, ground squirrels, and quail (Jacobs, 2019).

The southern San Joaquin Valley is characterized by a surface geology consisting of young (Holocene-age) alluvium and flood basin deposits (DWR, 2006). These consist of interstratified and discontinuous beds of clay, silt, sand, and gravel, and are approximately 150 feet thick at the margins of the valley. These younger deposits overly older alluvium.

# Paleoenvironment

During the late Pleistocene age, fossil evidence suggests that the San Joaquin Valley was inhabited by numerous large mammalian species including sloths, horses, bears, mammoth, bison, camels, as well as prong-horned antelope. Large carnivorous species included saber-toothed cats, wolves, mountain lions, desert coyotes and foxes, while smaller animals included rodents, rabbits, squirrels and a multitude of birds. Studies of pollen and pack rat middens suggest that desert vegetation began replacing the low-elevation woodlands between 12,000 and 8000 years ago. Evidence suggests that the plant and animal communities that exist within the San Joaquin Valley today did not become established until after 4,300 years ago (Price et al., 2008).

# **Prehistoric Setting**

The Central Valley prehistoric record is divided into three basic periods: Paleo-Indian (11,550 to 8550 cal B.C. - the "cal" prefix indicates that the dates are the result of radiocarbon calibration using tree ring data), Archaic (8550 cal B.C. to cal A.D. 1100), and Emergent (cal A.D. 1100 to Historic). The Archaic period is subdivided into three sub-periods: Lower Archaic (8550 to 5550 cal B.C.), Middle Archaic (5550 to 550 cal B.C.), and Upper Archaic (550 cal B.C. to cal A.D. 1100) (Jacobs, 2019).

#### Paleo-Indian (11,550 to 8,550 cal B.C.)

Evidence of human occupation of the Central Valley during the Paleo-Indian period comes primarily from the San Joaquin Valley. Basally thinned and fluted concave base projectile points, similar to Clovis points, have been found in three San Joaquin Valley areas: Tracy Lake, the Woolfsen mound, and the Tulare Lake basin. The Witt site (CA-KIN-32), located on a Late Pleistocene shoreline of Tulare Lake, produced hundreds of these points (Jacobs, 2019). Human and faunal bone recovered from this site dated to between 10,788 and 17,745 uncalibrated radiocarbon years before present; however, there is no direct association between the projectile points and the bone. Little other evidence of human occupation during the Paleo-Indian period is available for the Central Valley.

#### Lower Archaic (8550 to 5550 cal B.C.)

Lower Archaic occupation of the Central Valley is known mainly from isolated finds located along the ancient shorelines of lakes. Stemmed points, chipped stone crescents, and other flaked stone artifacts are frequently recovered from the ancient shorelines of Tulare Lake (Jacobs, 2019). Archaeological evidence from the valley floor and adjacent foothill areas suggest two distinct cultural adaptations, though the degree of variation and interaction between valley floor and foothill groups is presently unknown; these variations may not represent divergent adaptations, but rather seasonal expressions of the same group (Jacobs, 2019).

Very little archaeological evidence exists for occupation of the valley floor during the Lower Archaic. One component from site CA-KER-116 was dated to between 7175 and 6450 cal B.C. based on radiocarbon assays obtained from freshwater mussels. This site is located on the ancient shoreline of Buena Vista Lake, between Bakersfield and Taft (Jacobs, 2019). The artifact assemblage from CA-KER-116 included chipped stone crescents, a stemmed projectile point fragment, a carved stone atlatl spur, and some flaked stone tools. Faunal remains included freshwater fish, waterfowl, freshwater mussel, and artiodactyl. No plant remains or milling tools were recovered (Jacobs, 2019). While regional trade of marine shell beads and obsidian is well documented for other areas during this time, the Lower Archaic deposits from CA-KER-116 did not contain beads or obsidian.

In contrast to the valley floor, ground stone tools indicative of plant processing, such as handstones and millingslabs, are common in adjacent foothill sites (Jacobs, 2019). These sites appear to have been seasonally exploited, with nuts, such as acorn and pine, more commonly consumed than small seeds. Artifact assemblages suggest a semi-permanent settlement system with rotating occupation of seasonal camps.

#### Middle Archaic (5,550 to 550 cal B.C.)

The Middle Archaic is characterized by a climatic shift to warmer, drier conditions, similar to present-day conditions. This change was likely the primary impetus for culture change throughout California. In the Central Valley, Tulare Lake receded as the Sacramento-San Joaquin Delta wetland habitat developed.

By the Middle Archaic, foothill and valley floor groups had distinct and separate adaptations. Early sites from the Middle Archaic period are more abundant in the foothill areas and are characterized by large quantities of stone implements designed to exploit acorns and pine nuts. Projectile points are typically made from locally available materials and include notched, stemmed, thick-leaf, and narrow concave base darts. There is a lack of bone and shell artifacts (Jacobs, 2019).

Valley floor groups are better represented in sites dating from the later Middle Archaic period and reflect an increasing exploitation of river corridors in the Sacramento and San Joaquin valleys. Sites were occupied year round and technological assemblages suggest a growing reliance on fishing. Gorge hooks, composite bone hooks, and spears all appear in the archaeological record during the Middle Archaic. Tule elk, mule deer, pronghorn sheep, rabbits, and waterfowl are also represented in faunal assemblages and indicate exploitation of freshwater marshes, riparian forests, and grasslands. Mortars and pestles appear around 4,050 cal B.C.; however, acorn and pine nut remains are also commonly recovered from sites lacking mortars and pestles (Jacobs, 2019).

Middle Archaic northern San Joaquin Valley and southern Sacramento Valley sites include artifacts more common to later time periods elsewhere, including fine-twisted cordage, twined basketry, basketry awls, simple pottery, and baked clay objects (Jacobs, 2019). Items of personal adornment, such as stone plummets, bird bone tubes, and shell beads, are also present in Middle Archaic deposits (Jacobs, 2019)

Regional trade was widespread during the Middle Archaic, as evidenced by obsidian and shell beads and ornaments commonly recovered from sites. The earliest appearance of *Olivella* grooved-rectangle beads is in the southern San Joaquin Valley (at sites CA-KER-3166/H and CA-KER-5404) and generally date to 3050 cal B.C. or earlier (Jacobs, 2019). Settlement patterns reflect more stable, long-term occupation of resource-abundant areas.

The Middle Archaic period is typified by the Windmiller Pattern, first identified in the Sacramento-San Joaquin delta region. In the Central Valley, Windmiller sites generally date to between 1850 and 750 cal B.C. These sites, found as far south as Buena Vista Lake, are characterized by westerly oriented, ventrally and dorsally extended burials and complex grave offerings (Jacobs, 2019). During this period, Windmiller cemeteries exhibit not only a distinct burial pattern, but evidence of resource depletion and increased interpersonal violence. Osteological studies reveal higher levels of malnutrition and skeletal trauma, such as fractures and embedded stone points (Fagan, 2003).

#### Upper Archaic (550 cal B.C. to cal A.D. 1100)

Climatic changes at the start of the Upper Archaic resulted in a cooler, wetter, and more stable environment. During the Upper Archaic period, regional variations in adaptation were more common and focused on resources that could be processed in bulk, such as acorns, salmon, shellfish, rabbits, and deer. Polished and ground stone plummets, sometimes recovered as caches, are commonly recovered from riparian environments and marshlands in the delta and southern San Joaquin Valley. Use of mortars and pestles for food processing was prevalent, except for the valley margins where handstones and millingslabs remained dominant (Jacobs, 2019).

Shell bead trade and technological specialization increased. Shell bead types include saucer and saddleshaped *Olivella* beads. Bone wands, tubes, and ornaments, as well as well-made ceremonial obsidian blades, appear in the archaeological record at this time. In San Joaquin Valley, obsidian biface blanks were imported via east-west travel corridors from eastern Sierra Nevada Mountains quarries, including Bodie Hills, Casa Diablo, and Coso. Lanceolate-shaped bifaces were produced by specialized craftsman located near northern obsidian sources, and were widely traded throughout the Central Valley.

The delta region of the lower Sacramento Valley saw the rise of large mounded villages characterized by extensive habitation deposits with fire-cracked rock, hearths, ovens, house floors, and flexed burials. This adaptation is known as the Berkeley Pattern. However, descendants of the Windmiller Pattern remained in the San Joaquin Valley during this time period. Upper Archaic Windmiller sites in the San Joaquin Valley

are generally located along the western and southern margins of the delta, as well as near streams and marshes (Jacobs, 2019). Excavated cemeteries located along the western fringes of the San Joaquin Valley contained either flexed or extended burials, and may reflect alternating occupation of this area by valley and coastal range groups.

Sites around Buena Vista Lake in the southern San Joaquin Valley reflect year-round occupation of villages, as evidenced by house floors and extensive middens. House floors appear in the archaeological record as large, round depressions ranging in diameter from 4 to 8 meters and 0.3 to 1 meter in depth. Other indicators of residential dwellings include hearths, post holes, and underground storage pits (Chartkoff, 1998).

#### Emergent (cal A.D. 1000 to Historic)

During the Emergent Period, many Archaic Period technologies and cultural traditions disappeared throughout the Central Valley. Practices very similar to those observed by later European explorers appeared at this time. Research on Emergent Period sites in the San Joaquin Valley has been limited and only one cultural pattern, the Panoche Complex, has been fully identified. The Panoche Complex (circa A.D. 1500 to 1850) is characterized by large circular structures, flexed burials and cremations, small sidenotched projectile points, shell disk beads, and ground stone, such as mortars, pestles, and some metates (Jacobs, 2019).

The Emergent Period is often divided into the Lower Emergent (A.D. 500 to 1500) and Upper Emergent (A.D. 1500 to 1800). The Lower Emergent Period is characterized by banjo-type *Haliotis* ornaments, incised bird bone whistles and tubes, flanged soapstone pipes, and rectangular *Olivella* sequin beads. The bow and arrow replaced the dart and atlatl in hunting tool kits. Panoche side-notched points, a variation on the Desert side-notched point, have been recovered from Lower Emergent Period sites along the western side of the San Joaquin Valley. The Upper Emergent is characterized by small corner-notched and desert series projectile points, *Olivella* lipped and clam disk beads, bead drills, magnesite cylinders, and hopper mortars. While limited cremation was practiced during the Lower Emergent, it became widespread during the Upper Emergent. In general, increasingly complex burial practices developed, as indicated by grave goods and variation in burial type (Jacobs, 2019).

By the end of the Emergent Period, village sites and territorial boundaries closely resembling those documented in ethnographic literature had been established. Manufacturing centers were decentralized and raw materials in the form of obsidian cobbles and shell bead blanks were transported from their sources to areas where the finished product would be completed. Trade relations were highly regularized and sophisticated, with increasing quantities of goods moving over greater distances. Clam disk beads became a monetary unit of trade. Individual and groups of specialized craftsman arose, governing various aspects of production and exchange throughout California (Jacobs, 2019).

Central Valley sites during this time period exhibit faunal assemblages characterized by large quantities of fish bone and a diversity of bird and mammal bones, with some regional variations. Plant use is represented by the mortar and pestle, though the types of plants exploited in the San Joaquin Valley are not well documented. In the Sacramento Valley, small seeds became an increasingly important staple, as well as acorns, pine nuts, and manzanita. Diverse fishing equipment assemblages are common to the Sacramento Valley and include several types of harpoons, bone fish hooks, and gorge hooks. Twined and coiled basketry and netting have been recovered from several sites in the Central Valley, including CA-MER-3 (the Menjoulet Site) located near Los Banos Creek (Jacobs, 2019).

In the southern San Joaquin Valley, pottery was not manufactured but was obtained by trade with groups from the foothills to the east. Consumnes pottery was produced in the Sacramento Valley and is represented in several artifact assemblages from Sacramento County sites. Other clay items recovered from Sacramento Valley sites include baked clay balls (possibly used for cooking), and human and animal effigies (Jacobs, 2019).

House floors are common throughout the Central Valley during the Emergent Period. A very large house floor, probably representing a ceremonial structure, was documented during excavations at the Menjoulet Site in Merced County. The floor measured 28 meters in diameter with a mud wall around the perimeter. Thirty cremations and two inhumations were recovered from beneath the house floor (Jacobs, 2019).

# **Ethnographic Setting**

At the time of European contact, a number of tribal boundaries intersected in the area in which the project site is located. A number of tribal groups occupied the area in and surrounding the Southern San Joaquin Valley and the Tehachapi Mountains including the Chumash, the Southern Valley Yokut, the Kitanemuk, the Kawaiisu, and the Tataviam. These tribal groups are described in more detail below.

# Chumash

Occupying the northern Channel Islands and adjacent mainland from San Luis Obispo in the north to Malibu Canyon in the south and inland to the western edge of the San Joaquin Valley, the Chumash were the most influential and populous prehistoric group in California. Chumash culture featured pronounced status differentiation, inherited chieftainship, inter village alliance, and craft specialization. With some 150 villages, the Chumash are estimated to have numbered near 20,000 in the pre-contact era (Jacobs, 2019).

Focusing on sea mammal hunting, fishing, and shellfish collecting, the Chumash were primarily maritime adapted. Fish were taken by hook and line, nets, traps, spears, and poison (Jacobs, 2019). Seagoing plank canoes were used in the onshore and offshore fishery and to communicate with the Channel Islands. The Chumash groups located inland hunted small terrestrial game with deadfalls, rabbit drives, and by burning undergrowth, while larger game such as deer were hunted using bows and arrows. The primary plant resources were the acorn, gathered in the fall and processed in mortars and pestles, and various seeds that were harvested in late spring and summer and ground with manos and metates. The latter would include chia and other sages, various grasses, and islay or holly leafed-cherry (Jacobs, 2019).

The Emigdiano and Castac Chumash occupied the area adjacent to the project site. The boundaries of their territory are roughly defined as extending from Castaic Lake to the Mount Abel-Tecuya Mountain region in the northwest (Jacobs, 2019). Emigdiano and Castac villages located near the project site include: *Takuyo* located in Tecuya Canyon approximately 5.5 miles west of the projects site; *Kashtiq*, located approximately 7.5 miles south of the project site on the north shore of the natural Castaic Lake near Lebec; and *Lapau*, located approximately 12.5 miles northwest of the project site at the mouth of Tejon Canyon (Jacobs, 2019). Population estimates for interior Chumash are difficult to ascertain, but ethnographic and archaeological evidence suggest a population of several hundred individuals within Emigdiano territory (Jacobs, 2019). One of the most elaborate examples of Chumash rock art is located in Emigdiano territory within a cave near the village of *Tashlipunau* on San Emigdio Creek, approximately 18.5 miles west of the Project area. It is considered one of the finest examples of prehistoric rock art in the United States (Jacobs, 2019).

## **Southern Valley Yokut**

The project is in the territory associated with the ethnographic Yokuts (Kroeber 1925; Jacobs, 2019), who are unique among Native Californians in that they were divided into true tribes. Each tribe had a unique name, a distinct dialect, and a defined territory (Kroeber 1925). The Yokuts language is a member of the California Penutian stock that includes four other groups found in Central California: Miwok, Costanoan, Maiduan, and Wintuan. The Yokuts appear to have arrived in the Southern San Joaquin Valley sometime prior to A.D. 1400, as a result of a spread from the north. Yokuts were divided into three groups: Southern Valley Yokuts, Northern Valley Yokuts, and Foothill Yokuts. Specifically, the project is situated within the traditional lands of the Southern Valley Yokuts whose territory extended from the Tehachapi Mountains in the south to the lower Kings River in the north (Jacobs, 2019). Once Europeans reached the area, the Southern Valley Yokuts rapidly disappeared because of disease, missionization, and most significantly, the gold rush. Southern Valley Yokuts established permanent settlements on high ground near larger bodies of water, above flood levels. Housing consisted of small round or oval-shaped structures framed by light wooden poles tied together and topped with tule mats (Jacobs, 2019). Subsistence and raw materials were provided by local water resources. Abundant tule, growing in the marshes and along riverbeds, provided the Yokuts with natural materials to build reed canoes and basketry. Basketry tools, such as awls, were manufactured primarily from large mammal bones. Cordage was constructed from milkweed. Stone was less abundant in the Southern Valley Yokuts territory and lithic material and milling implements were generally obtained through trade. Other items acquired through trade with neighboring groups include Olivella and abalone shells, as well as clam disk monetary beads (Jacobs, 2019).

Their diet consisted mainly of fish, waterfowl, shellfish, roots, and seeds. Preferred fish included lake trout and, when available, steelhead, salmon and sturgeon. Chub, perch, and suckers were less desirable and caught in smaller numbers. Fish were caught by trolling with nets, diving with hand nets, spearing, basketry traps, with bare hands, or with a bow and arrow. Available waterfowl included geese, ducks, and mud hens. Methods for capturing birds included snares, nets, bow and arrow, and throwing tule mats over their prey. Stuffed decoys were employed to assist in capture. The Yokuts also acquired eggs from nests (Jacobs, 2019; Fagan 2003).

Other foodstuffs included freshwater mussels, turtles, wild seeds and roots, which were all consumed in large quantities. Grassnut roots were roasted whole or made into a paste. For the Southern Valley Yokuts, the absence of oak trees in the valley floor meant that acorns were only available by travel or trade. Land mammals comprised an insignificant percentage of their diet. On occasion, wild pigeons, jackrabbits, ground squirrels, and burrowing rodents were acquired. Larger game, such as antelope and elk, were not hunted in the open, but were shot from hunting blinds or captured by setting nooses attached to spring poles near watering spots (Jacobs, 2019).

Yokuts were egalitarian in their political organization and were organized into distinct groups each of which had their own name, dialect, and territory. Local groups were self-governing and all members received equal ownership and access to most resources (Arkush, 2003). The Southern Valley Yokut groups maintained trade relationships with the Chumash, who lived to the southwest (Fagan, 2003).

At least 15 known groups with their own dialects inhabited the area, with the Tulamni occupying the area around Buena Vista Lake (Jacobs, 2019). The nearest villages to the project site were *Tinliu* in the vicinity of Paseo Creek, approximately 6 miles north of the project; *Pahlin*, located at on the south side of Kern Lake approximately 15.5 miles northwest of the project; and *Loasau* on the northern shore of Kern Lake, approximately 18 miles northwest of the project (Kroeber, 1925; Jacobs, 2019).

During the Spanish and Mexican Periods (1769 through 1846), the Northern Valley and Foothill Yokuts rapidly declined in population. European disease swept through the San Joaquin Valley; in 1833, a particularly virulent malaria epidemic wiped out entire tribes. Decreasing native populations along the coast resulted in the Franciscan friars pulling neophytes from farther and farther inland. Many Northern Yokuts were taken to the San Jose, Santa Clara, Soledad, San Juan Bautista, and San Antonio missions. Southern Valley Yokuts appear to have been less affected by missionization and experienced little exploration by the Spanish: Fages and a small group came in through the Tehachapi Pass in 1772 and the Garces expedition in 1776 (Jacobs, 2019). Native populations did however decline significantly by the early 1800s and is not clear whether tribes willingly left the San Joaquin Valley (Jacobs, 2019). During the Mexican Period, the Southern San Joaquin Valley became a safe zone, of sorts, for runaway neophytes. Aided by the Southern Valley Yokuts, the project area and into the Tehachapi Pass housed runaways who in turn brought with them customs from their culture and new practices acquired from living in the mission system with the Spaniards. The Yokuts took to Spanish influenced technologies, practices and subsistence and became known for successfully raiding from the new ranches, specifically horses, subsequently bringing military attention to the Yokuts. During the American Period, which began in 1846, the Yokuts were further decimated by the thousands of prospectors in search of gold who descended upon the San Joaquin Valley (Jacobs, 2019)

#### **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. 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.

#### Kawaiisu

The Kawaiisu may be divided into two groups: the Mountain Kawaiisu and the Desert Kawaiisu (Sutton, 1988). 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). Parts of the valley floors may also have been inhabited by the Kawaiisu. 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.

## Tataviam

Tataviam territory was concentrated primarily along the upper reaches of the Santa Clara River drainage between the San Fernando Valley to the south and Pastoria Creek in the Tehachapi Mountains to the north. Their territory also included east Piru Creek and the southern slopes of the Sawmill and Liebre Mountains, and extended into the southern end of the Antelope Valley (King and Blackburn, 1978). The northern boundary was likely along upper Piru Creek south of Hungry Valley and Cañada de los Alamos (Johnson and Earle, 1990). Tataviam territory was bounded by the Gabrielino to the south, the Serrano to the east, the Kitanemuk to the northeast, the Emigdiano Chumash to the north, and the Ventureño Chumash to the west.

There are few historical sources regarding the Tataviam. The word "Tataviam" most likely came from a Kitanemuk word that may be roughly translated as "people of the south-facing slope," due to their settlement on south-facing mountain slopes (King and Blackburn, 1978). The Chumash referred to them as "Alliklik" (Kroeber, 1925). The Tataviam spoke a language that was part of the Takic branch of the Uto-Aztecan language family (King and Blackburn, 1978). The language was related to those spoken by the Gabrieliño-Tongva and Kitanemuk.

Tataviam villages varied in size from larger centers with as many as 200 people, to smaller villages with only a few families (King and Blackburn, 1978). At the time of Spanish contact, the Tataviam population is estimated to have been less than 1,000. Primary vegetable food sources included acorns, juniper berries, seeds, and yucca buds. Small game such as antelope and deer supplemented these foods. Trade networks between inland groups such as the Tataviam, the coastal regions, and desert regions enabled the trade of exotic materials such as shell, asphaltum, and steatite.

The nearest villages to the project site were *Quechao* and *Matapjajua* located approximately 19.5 miles southeast and 22 miles south of the project site, respectively (FTBMI, n.d.).

# **Historic Context**

Spanish explorers first encountered the Southern Valley Yokuts in 1772 when a small contingent of soldiers, led by Pedro Fages, passed through the Tejon Pass and into the southern San Joaquin valley. After a stop at a village on Buena Vista Lake, the party headed west toward San Luis Obispo. The area was visited again in 1776 by Francisco Garcés. In 1806, Franciscans made a futile attempt to missionize the Southern Valley Yokuts. While a few members of some Southern Valley Yokut groups were absorbed into the mission system, the majority of Central Valley Native Americans avoided this fate (Jacobs, 2019).

By the early 1800s, Spanish army officers and veterans living in California began receiving grants of land and establishing large private grazing areas. These grants tended to be near previous missions along the coast or in areas with reliable drinking water supplies and where prehistoric human habitation already existed. No missions were established in the area, however, and native culture was altered only minimally through early contact. The Spanish Period had little influence on native groups in the southern Central Valley, and no ranchos were granted there during the Spanish Period.

The Southern San Joaquin Valley became, instead, a haven for runaway neophytes (a term for a Native American newly converted to Christianity). These runaways introduced their own customs, as well as some learned from the Spanish, including a desire for horses. The Yokuts began to raid missions and ranchos and became known as the "Horsethief Indians" (Jacobs, 2019). After Mexico won its independence from Spain, Mexican rancheros began to retaliate, trying to recover their lost livestock. Their efforts included punishing and enslaving the Yokut raiders. A malaria epidemic in 1833 decimated the Southern Valley Yokuts, killing roughly 75 percent of the population (Jacobs, 2019).

Other intrusions in the Central Valley included American and British-Canadian fur trappers, who entered the valley as early as 1827, and John C. Fremont, who conducted scientific expeditions into the southern

San Joaquin Valley in 1844 and 1845 (JRP Historical Consulting, 2009). However, sustained contact with Europeans did not occur until after 1850, when California became part of the United States. The remaining population of Yokuts gave up rights to their lands in exchange for goods in an 1851 treaty with the United States government. The Southern Valley Yokuts were subsequently moved onto either the Tejon or Fresno reservations (Jacobs, 2019).

Early American interest in southwestern Kern County focused on its use as a transportation corridor. In 1854, Fort Tejon was established to protect strategic mountain routes between the San Joaquin Valley and Southern California (Kyle, 1990). Many Euro-Americans traveled from the south to the gold country to the north by way of the Central Valley. The Central Valley was also used for cattle ranching and agriculture. The wetlands of the Valley were reclaimed and irrigation canals built to facilitate agriculture.

Kern County has a long history of oil production. In 1864, Buena Vista Petroleum Company incorporated and began drilling and refining oil near present-day McKittrick. Kerosene was the primary product and by 1866, the company was producing between 2,500 and 3,000 gallons of kerosene a day and shipping it on the San Joaquin River to Stockton and San Francisco (Burmeister, 2003). In the 1890s, oil companies began to realize the utility of asphaltum for street paving and began production and shipment of this product. Today, the San Joaquin Valley still produces more than half of the oil produced in California.

# **History of the Project Vicinity**

Euro-American occupation of the project vicinity occurred at the end of the Mexican Period when the El Tejon and Castac land grants were awarded by the Mexican government (Jacobs Engineering Group, 2019). The 97,000-acre Tejon land grant was given to Aguirre and Del Valle of El Tejon on May 9, 1863, and the 22,000 acres Castac was granted to Covarrubias on November 27, 1866 (Jacobs Engineering Group, 2019). Despite the large land grants, the area remained largely unoccupied until Lt. Edward Fitzgerald Beale, a U.S. Army Officer in the Mexican-American War, purchased the Rancho de Castac, Rancho el Tejon, Rancho los Alamos, and Agua Caliente land grants and established Tejon Ranch. The ranch was operated as a cattle ranch by the Beale family until 1912.

During the early 20th century the demand for power in Los Angeles grew dramatically. During this time, Henry Huntington, entrepreneur and owner of the Pacific Electric Railway, began to search for sources of electricity to power his streetcars. Huntington founded the Pacific Light and Power Company (PLPC) to explore means of hydroelectric generation and transmission, identifying the nearest practical hydroelectric energy resource in the upper San Joaquin River basin, in the Sierra Nevada mountain range. In 1911, the PLPC began construction on the Big Creek Hydroelectric system, which consisted of a series of dams and power houses on the upper San Joaquin basin. To transmit the power from the Big Creek Hydroelectric system to Los Angeles, the PLPC constructed two parallel lines called the Big Creek East and West Transmission Line, stretching 241 miles from the Big Creek hydroelectric complex to Los Angeles (Jacobs Engineering Group, 2019). When construction of the lines was completed in 1913, they were the longest transmission lines in the world (Jacobs Engineering Group, 2019). In 1917, Southern California Edison purchased PLPC and today, the Big Creek system delivers more than 1,000 megawatts of power (Jacobs Engineering Group, 2019).

# **Existing Cultural Resources**

#### Methods Used to Identify Known Cultural Resources

To evaluate the project's potential effects on significant cultural resources, a cultural resources assessment for the project was prepared, which included a records search, a Sacred Lands File (SLF) search conducted by the California Native American Heritage Commission (NAHC), and a pedestrian survey (Jacobs Engineering Group, 2019). The methodology and results of the assessment are summarized below.

#### Southern San Joaquin Valley Information Center Records Search

A cultural resources record search for the project site was conducted by staff at the Southern San Joaquin Valley Information Center (SSJVIC) housed at the California State University, Bakersfield on April 20, 2018 (Jacobs Engineering Group, 2019). The record searches included a review of all previous cultural resources studies, recorded archaeological resources, and built-environment resources within 1 mile of the proposed solar field and within 0.5 miles of the proposed gen-tie. Additional sources consulted included the National Register of Historic Places (National Register), the Historic Property Data File, the listing of California Historical Landmarks (CHL), the California Register of Historical Interest, and the Archaeological Determinations of Eligibility

The results of the SSJVIC records searches indicate six previous cultural resources studies have been conducted within the records search study area, four (KE-02861, -02965, -03089, and -04326) of which overlap the project site. Approximately 5 percent of the project site has been previously subject to survey.

The SSJVIC records indicate that 13 cultural resources were previously recorded within the records search study area. Of these 13 cultural resources, one resource was previously recorded within the project site. These 13 resources include the following (see also **Table 4.5-1**, *Previously Recorded Cultural Resources*):

- Six prehistoric archaeological sites: P-15-009629, -009630, -009633, -011387, and -011388
- Five prehistoric isolates:(P-15-011397, -011398, -011399, -011400, and -011401
- Two historic-period built resources: P-15-015820 (California Aqueduct) and -019115 (Big Creek East and West Transmission Line). P-15-019115 (Big Creek East & West Transmission Line), overlaps the gen-tie portion of the project site.

Primary No. (P-15-)	Permanent Trinomial (CA-KER-)	Resource Description	Date(s) Recorded	Eligibility Status
000810	810	Prehistoric archaeological site: bedrock milling features	1991, 1978	Not evaluated
009629	5855	Prehistoric archaeological site: bedrock milling features	1999	Not evaluated
009630	5856	Prehistoric archaeological site: bedrock milling features	1999	Not evaluated
009633	_	Prehistoric archaeological site: bedrock milling features	1999	Not evaluated
011387	6622	Prehistoric archaeological site: bedrock milling features	2004	Not evaluated
011388	6623	Prehistoric archaeological site: bedrock milling features	2001	Not evaluated
011397	_	Prehistoric isolate: chalcedony flake	2001	Not eligible
011398		Prehistoric isolate: chert flake	2001	Not eligible
011399	_	Prehistoric isolate: basalt mortar	2001	Not eligible
011400		Prehistoric isolate: basalt mortar	2001	Not eligible
011401		Prehistoric isolate: quartzite cutting tool	2001	Not eligible
015820	—	Historic-period built resource: California Aqueduct	2016	Recommended eligible
019115	—	Historic-period built resource: Big Creek East & West Transmission Line	2016	Listed

#### TABLE 4.5-1: PREVIOUSLY RECORDED CULTURAL RESOURCES

#### Sacred Lands File Search

The NAHC maintains a confidential SLF, which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on June 5, 2019, to request a search of the SLF. The NAHC responded to the request in a letter dated June 11, 2019. The results of the SLF search conducted by the NAHC indicate that Native American cultural resources are not known to be located within or near the project site.

#### Cultural Resources Surveys

An intensive pedestrian survey of the project site was conducted on April 30, March 1, and August 1 through 3, 2018 (Jacobs Engineering Group, 2019). The survey was conducted using transects spaced at 15-meter (approx. 50 feet) intervals. The project site consists of relatively flat to gently sloping open grassland that is currently used for cattle grazing. Ground visibility throughout the project site was obscured by thick vegetation including cheat grass, fiddleneck, and other non-native grasses, which reduced visibility to approximately 30 percent. Soil exposures in cut banks, cattle trails, rodent burrows were carefully examined where encountered for artifacts and anthropogenic soils.

### **Cultural Resources Recorded within the Project Site**

As a result of the cultural resources survey, one previously recorded historic-period built resource, the Big Creek East & West Transmission Line (P-15-019115), was identified. The transmission line was constructed in 1913 by PLPC as part of the Big Creek Hydroelectric system. The Big Creek East and West Transmission Line consists of two parallel 220 kV lines that transmit power over distance of 241 miles from the Big Creek Powerhouses Nos. 1 and 2 in the Sierra National Forest to the Eagle Rock Substation in Los Angeles (Jacobs Engineering Group, 2019). The resource passes over the project's proposed gen-tie line and is listed in the National Register as a contributing element to the proposed Big Creek Hydroelectric System Historic District. Because the resource is National Register-listed, it qualifies as a historical resource pursuant to CEQA.

No archaeological resources were identified in the project site as a result of the cultural resources assessment.

#### Nearby Cultural Resources

Although not identified in the records search at the SSJVIC discussed previously, one additional resource occurs in the vicinity of the project site. The Sebastian Indian Reservation (P-15-007674/CHL 133), which was designated in 1934 as a California Historical Landmark (CHL) and due to the age of the listing, never included a geographical boundary, is located generally south of the project site at the base of the Tehachapi foothills, Because the Sebastian Indian Reservation CHL is unbounded, the remaining extant contributing sites for the reservation have been researched and nominated for the National Register of Historic Places as the Sebastian Indian Reserve Discontiguous Archeological District (Sebastian Reserve District). The Sebastian Indian Reservation Landmark and Sebastian Reserve District are referenced together.

In 2013, Tejon Ranch sponsored a project to identify and map the existing remnants of the Sebastian Indian Reservation and to nominate all contributing sites to the NRHP as a historic district, to ensure its preservation. In 2014, the Sebastian Reserve District was nominated for listing in the National Register, and the State Historic Resources Commission approved the nomination by consent calendar on November 7, 2014. This approval means that the district is listed on the CRHR and found to be eligible for listing on the NRHP. Final approval by the Keeper of the NRHP will officially add the district to the National Register.

The district consists of five primary Native American villages occupied during the district's period of significance (1850–1875), including the first reserve headquarters, and remnants of the second headquarters. The archeological sites comprising the district landscape, and the features and artifacts within them, accordingly, represent the only physical remnants of the original reservation.

#### Potential for Unknown Buried Cultural Resources

A review of geologic maps indicates alluvial sand and gravels (Qg) are mapped at the surface within the project site (Diblee, 1973). These alluvial deposits are derived from the Tehachapi mountains to the south. The alluvium dates to the Holocene (11,700 years BP to present), a period of time that encompass the entirety of human occupation in the valley. Six soil types are present in the project site including: Hesperia sandy loam, Psamments-Xerolls complex, Guijarral-Klipstein complex, Premier sandy loam, Pleito sandy clay loam, and Laval-Pleitito complex; these soils extend to depths of 6.7 feet (Jacobs Engineering Group, 2019).

The SSJVIC records search indicates six prehistoric archaeological resources, consisting of bedrock milling sites, were previously recorded within 1 mile of the project site. The majority of these sites are clustered along the margins of Pastoria Creek, which, along with the perennial creeks emanating from the Tehachapi Mountains, must have provided reliable water sources, drawing prehistoric peoples to the area. Additionally, the Sebastian Indian Reservation (P-15-007674/CHL 133), documented as an archaeological district, is located roughly 1 mile to the south.

Given that the project site is covered with Holocene alluvial deposits, which were deposited over the course of known human occupation in the region, coupled with the documented prehistoric use of the area, there is a possibility that the alluvium within the project site has buried prehistoric archaeological sites that once existed on the surface. As such, there is a possibility that buried archaeological deposits may be encountered during project-related excavation.

# 4.5.3 Regulatory Setting

# Federal

There are no applicable federal regulations for this issue area.

# State

# **California Register of Historical Resources (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 and CHLs numbered 770 and higher, are automatically included in the California Register. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys or designated by local landmarks programs, may be nominated for inclusion in the California Register. A resource, either an individual property or a contributor to a historic district, may be listed in the California Register if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on National Register criteria:

- 1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- 2. It is associated with the lives of persons important in our past.
- 3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
- 4. It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC 5024.1, Title 14 California Code of Regulations [CCR], Section 4852(c), a cultural resource must retain integrity to be considered eligible for the California Register. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting,

materials, workmanship, feeling, and association. Cultural sites that have been affected by grounddisturbing 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

CHLs are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have Statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the County Board of Supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770. CHLs #770 and above are automatically listed in the California Register.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

- 1. It is the first, last, only, or most significant of its type in the State or within a large geographic region (Northern, Central, or southern California);
- 2. It is associated with an individual or group having a profound influence on the history of California; or
- 3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

## **California Points of Historical Interest**

California Points of Historical Interest (PHI) are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. PHI designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register. No historical resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a PHI, a resource must meet at least one of the following criteria:

- 1. It is the first, last, only, or most significant of its type within the local geographic region (city or county);
- 2. It is associated with an individual or group having a profound influence on the history of the local area; or

3. It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

### California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. The *CEQA Guidelines* (Title 14 CCR Section 15064.5) recognize that an historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 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 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**

Sections 6254(r) and 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public related to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency".

# California Health and Safety Code Sections 7050 and 7052

Health and Safety Code Section 7050.5 declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

# **California Penal Code Section 622.5**

California Penal Code Section 622.5 provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands but specifically excludes the landowner.

# 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 N: The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.
- Measure O: On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

# 4.5.4 Impacts and Mitigation Measures

# Methodology

The project's potential impacts to cultural resources were evaluated using a variety of sources. To evaluate the project's potential effects on significant archaeological and historic built environment resources, a cultural resources assessment of the project site was conducted, which included a records search, a SLF search, and a cultural resources pedestrian survey (Jacobs Engineering Group, 2019). Based on these data, 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.

The records search and cultural resources pedestrian survey conducted for the project identified the presence of one previously recorded historical resource within project site. This resource is the National Register-listed Big Creek East & West Transmission Line (P-15-019115), which is a contributor to the Big Creek Hydroelectric System Historic District. The resource passes over the proposed route of the project gen-tie line. Installation of the gen-tie line would not directly impact the Big Creek East & West Transmission Line, nor would it significantly alter the ability of the transmission line to convey its status as a contributor to the Big Creek Hydroelectric System Historic District. Therefore, the project would not result in impacts to known historical resources.

Although no known subsurface historical resources were identified within the project site, there is the potential for unknown subsurface archaeological resources that qualify as historical resources to exist within the project site. The SSJVIC records search identified a number of prehistoric archaeological sites consisting bedrock millings sites within 1 mile of the project site, and the Sebastian Indian Reservation (P-15-007674/CHL 133), documented as an archaeological district with multiple sites, is located roughly 1 mile away. A review of geologic maps and soils data indicate Holocene-age alluvial sediments that may extend to depths of 6.7 feet within the project site. Although no indication for the presence of archaeological resources was identified within the project site during the survey, ground surface was obscured by thick vegetation, which resulted in visibility of less than 30 percent, inhibiting the identification of archaeological resources. The Holocene age and depth of the alluvial deposits within the project site. Should subsurface archaeological resources within the project site, they may qualify as historical resources pursuant to CEQA and could be subject to potential impacts as result of project implementation. Therefore, the project has the potential to cause a substantial change in the significance of a historical resource.

#### Mitigation Measures

**MM 4.5-1:** The project proponent/operator shall retain a Lead Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology (U.S. Department of the Interior, 2011), to carry out all mitigation measures related to archaeological and unique historical resources. The contact information for this

Lead Archaeologist shall be provided to the Kern County Planning and Natural Resources Department prior to the commencement of any construction activities onsite. Further, the Lead Archaeologist shall be responsible for ensuring the following employee training provisions are implemented during implementation of the project:

a. Prior to commencement of any ground disturbing activities, the Lead Archaeologist in consultation with the Native American monitor(s) shall conduct a Cultural Resources Sensitivity Training for all personnel working on the 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.

The training shall include an overview of potential cultural resources that could be encountered during ground disturbing activities to facilitate worker recognition, avoidance, and subsequent immediate notification to the Lead Archaeologist and/or Native American monitor(s) for further evaluation and action, as appropriate; and penalties for unauthorized artifact collecting or intentional disturbance of archaeological resources.

- b. The project proponent/operator shall ensure all employees or onsite workers who have not participated in earlier Cultural Resources Sensitivity Trainings shall meet the provisions specified above.
- c. A copy of the Cultural Resources Sensitivity Training Guide/Materials shall be kept on-site and available for all personnel to review and be familiar with as necessary. It is the responsibility of the Lead Archaeologist to ensure all employees receive appropriate training before the work on-site.
- **MM 4.5-2:** 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. Provide an overview of best management practices to be utilized during construction activities to ensure protection of cultural resources.
  - b. 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 Native American Tribal Monitors working under the supervision of the Lead Archaeologist and 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 initial excavation and ground-disturbing activities within the project area, shall be monitored by archaeological and Native American monitors.
  - b. The Lead Archaeologist, archaeological monitors, and Native American monitors shall be provided all project documentation related to cultural resources within the project

site prior to commencement of ground disturbance activities. Project documentation shall include but not be limited to previous cultural studies, surveys, maps, drawings, etc. Any modifications or updates to project documentation, including construction plans and schedules, shall immediately be provided to the Lead Archaeologist, archaeological monitor, and Native American monitor.

- c. The archaeological monitor(s) shall keep daily logs and the Lead Archaeologist shall submit monthly written updates to the Kern County Planning and Natural Resources Department. After monitoring has been completed, the Lead Archaeologist shall prepare a monitoring report detailing the results of monitoring, which shall be submitted to the Kern County Planning and Natural Resources Department 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 Native American monitor. The Lead Archaeologist, in consultation with the Native American monitor, shall evaluate the significance of the discovery is necessary, the Environmentally Sensitive Area shall remain in place until all work is completed. Per California Environmental Quality Act Guidelines Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources.

Consistent with California Environmental Quality Act Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the Lead Archaeologist in consultation with the Native American monitor shall develop additional treatment measures in consultation with the County, which may include data recovery or other appropriate measures. The County shall consult with appropriate Native American representatives in determining appropriate treatment for unearthed cultural resources if the resources are prehistoric or Native American in nature. Diagnostic archaeological materials with research potential recovered during any investigation shall be curated at an accredited curation facility. The Lead Archaeologist, in consultation with a designated Native American monitor, shall prepare a report documenting evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to the southern San Joaquin Valley Information Center at California State University, Bakersfield.

#### Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.5-1 through MM 4.5-4, impacts would be less than significant.

# Impact 4.5-2: The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5.

As discussed above under Impact 4.5-1, there is a potential for the project to impact previously unknown, buried archaeological deposits. The project site is covered by Holocene-age alluvium. Given that the Holocene alluvium was deposited during the course of human occupation of the region, there is a possibility that the sediments may have buried archaeological sites. As such, buried archaeological sites may be encountered during project-related excavation. In the event that unknown archaeological resources are discovered during project construction, significant impacts could occur. However, with implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4, which require cultural resources sensitivity training for construction workers, 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

Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required.

#### Level of Significance after Mitigation

With implementation of the Mitigation Measures MM 4.5-1 through MM 4.5-4, impacts would be less than significant.

# Impact 4.5-3: The project would disturb human remains, including those interred outside of formal cemeteries.

There is no indication, either from the archival research results or the archaeological survey, that any particular location within the project area has been used for human burial purposes in the recent or distant past. However, in the event that human remains are inadvertently discovered during project construction activities, the human remains could be damaged or disturbed, which would be a significant impact. Implementation of Mitigation Measure MM 4.5-5 would ensure that any human remains encountered during Project implementation are properly treated, thus reducing impacts to a less-than-significant level.

#### Mitigation Measures

**MM 4.5-5:** If human remains are uncovered during project construction, the project contractor shall immediately halt work within 100 feet of the find, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5(e)(1) of the California Environmental Quality Act Guidelines. If the County Coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5(c), and Public Resources Code 5097.98 (as amended by Assembly Bill 2641). The Native American Heritage Commission shall designate a Most Likely Descendent for the remains per Public Resources Code 5097.98. Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendent

regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the Coroner, nor of Native American origin, provisions of the California Health and Safety Code (7100 et seq.) directing identification of the next-of-kin will apply.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.5-5, impacts would be less than significant.

# **Cumulative Setting, Impacts, and Mitigation Measures**

An analysis of cumulative impacts takes into consideration the entirety of impacts that the projects, zone changes, and general plan amendments discussed in Chapter 3, *Project Description*, of this EIR, would have on cultural resources. The geographic area of analysis of cumulative impacts for cultural resources includes the Southern San Joaquin Valley, which includes the southwest portion Kern County. This geographic scope of analysis is appropriate because the archaeological, and historical resources within this area are expected to be similar to those that occur on the project site because of their proximity, and because the similar environments, landforms, and hydrology would result in similar land-use and thus, site types. Further, this is a large enough area to encompass any effects of the project on cultural resources that may combine with similar effects caused by other past, current, and reasonably foreseeable future projects, and provides a reasonable context wherein cumulative actions could affect cultural resources. Multiple projects are proposed throughout the Southern San Joaquin Valley including surface mining, telecommunication infrastructure, and commercial development. Cumulative impacts to cultural resources in the Southern San Joaquin Valley could occur if other projects, in conjunction with the project, had or would have impacts on cultural resources that, when considered together, would be significant.

Development of the 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 impacts to unknown archaeological resources that could be encountered during construction of the project. Implementation of Mitigation Measure MM 4.5-1 requires cultural resources sensitivity training for construction workers. Mitigation Measure MM 4.5-2 requires the preparation of a Cultural Resources Treatment Plan to ensure protection of cultural resources. Mitigation Measure MM 5.4-3 requires archaeological and Native American monitoring to ensure that any currently unknown archeological resources that qualify as historical resources or unique archaeological resources are identified during construction. Mitigation Measure MM 4.5-4 requires appropriate treatment of uncovered archaeological resources, including those that qualify as historical resources. Implementation of these mitigation measures would reduce the project's incremental potential impacts to historical and archaeological resources to a less-than-significant level, and ensure that project impacts to cultural resources are not cumulatively considerable. Although project construction has the potential to disturb human remains, as do other projects in the cumulative study area, the implementation of Mitigation Measure MM 4.5-5 would ensure that appropriate laws and protocols are followed with regard to identifying and handling remains, and ensure that cumulative impacts are not significant.

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5, as described above, the project would not result in significant impacts to cultural resources. Given this minimal impact, as well as similar mitigation requirements for other projects in the Southern San Joaquin Valley, project's incremental effect

is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus cumulative impacts to cultural resources would be less than significant.

## **Mitigation Measures**

Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5 would be required.

# Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.5-1 through MM 4.5-5, impacts would be less than significant.

This page intentionally left blank
### 4.6.1 Introduction

This energy section of the EIR analyzes the energy implications of the project, focusing on the following three energy resources: electricity, natural gas, and transportation-related energy (petroleum-based fuels). This section includes a summary of the project's anticipated energy needs and conservation measures. Information in this section is primarily based on the *Energy Study for the Pastoria Solar Project, Kern County, California* (Jacobs, 2019) provided in Appendix F 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 *CEQA Guidelines* Appendix F (AEP, 2018). Public Resources Code Section 21100(b) and *CEQA Guidelines* Section 15126.4 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 questions asking if a project could result in wasteful energy resource consumption during project construction or operation and whether the project conflicts with state or local renewable energy or 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, the potential to generate, is typically rated in megawatts (MW), which is 1 million watts, while energy usage is measured with a time component, typically in megawatt-hours (MWh) or gigawatt-hours (GWh), which is 1 billion watt-hours.

According to the U.S. Energy Information Administration (EIA), California used approximately 257,268 gigawatt hours of electricity in 2017 (EIA, 2019a). The sector-specific breakdown for energy consumption in 2017 indicates that commercial uses utilized 46 percent of the state's electricity, followed by 35 percent for residential uses, and 19 percent for industrial uses (EIA, 2019a). Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA, 2018a).

Retail electric service in Kern County is split between Pacific Gas and Electric (PG&E) and Southern California Edison (SCE). PG&E's retail service is concentrated in western Kern County while SCE serves the east County area. Refer to the interactive map of PG&E's retail electric service territory (PG&E, 2020) and SCE's retail electric service territory (SCE, 2020).

The project is located in PG&E's retail electric service territory. Accordingly, electric power for construction and station power for operations would be brought to the site through a new PG&E service connection.

While PG&E provides retail electric service, the electricity generated by development of the solar panels on the project site would be delivered to a wholesale electric customer, such as SCE. Power generated is expected to flow from the project substation through the gen-tie line leading to the Pastoria Energy Facility (PEF) substation and ultimately to a wholesale energy customer.

SCE, like other wholesale energy purchasers, obtains its energy supplies from power plants in California, as well as from energy purchased outside its service area and delivered through high-voltage transmission lines. Power is generated from various sources, including fossil fuel, hydroelectric, nuclear, solar, wind, geothermal and other renewable resources and is fed into the electrical grid system serving Southern California. The electricity generated by development of the solar panels proposed on the project site would be conveyed through existing conductors to SCE's Pastoria Substation.

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.

Energy Resource	2018 SCE	2018 CA Power Mix (for comparison) <sup>a</sup>
Eligible Renewable	36%	31%
Biomass & bio-waste <sup>b</sup>	1%	2%
Geothermal	8%	5%
Small 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 <sup>c</sup>	37%	11%
Tota	al 100%	100%

#### TABLE 4.6-1: ELECTRIC POWER MIX DELIVERED TO RETAIL CUSTOMERS IN 2018

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.

The Eligible Renewables category is further delineated into the specific sources: biomass & waste, geothermal, small hydroelectric, solar, and wind

<sup>c</sup> "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources. SOURCES: SCE. 2019.

### **Natural Gas**

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs and delivered through high-pressure transmission pipelines. Natural gas provides almost one-third of the state's total energy requirements. Natural gas is measured in terms of cubic feet (cf).

According to the EIA, California used approximately 2,110,829 million cubic feet of natural gas in 2017 (EIA, 2019b). While the supply of natural gas in the United States and production in the lower 48 states has increased greatly since 2008, California produces little, and imports 90 percent of its supply of natural gas (EIA, 2019b).

Southern California Gas Company (SoCalGas) is the natural gas provider in the project vicinity (SoCalGas, 2007); however, there is no natural gas service for the undeveloped project site, and no natural gas is required for the project.

### Transportation

California used approximately 18.6 billion gallons of petroleum in 2017 (EIA, 2019c). By sector, transportation uses utilize approximately 85.5 percent of the state's petroleum, followed by 11.1 percent from industrial, 2.5 percent from commercial, 0.9 percent from residential, and 0.01 percent from electric power uses (EIA, 2018b). In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gas (GHG) from the transportation sector, and reduce vehicle miles traveled (VMT) (CEC, 2016a). The California Energy Commission (CEC) predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels (CEC, 2016b). According to the California Air Resources Board's (CARB) EMFAC2017 Web Database that estimates the emissions inventory of on-road mobile sources in California, Kern County on-road transportation sources consumed approximately 454 million gallons of gasoline and 308 million gallons of diesel fuel in 2018 (CARB, 2019).

### 4.6.3 Regulatory Setting

### Federal

#### **Corporate Average Fuel Standards**

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and United States Environmental Protection Agency (USEPA) jointly administer the CAFE standards (NHTSA, 2019). The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. USEPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type (USEPA and NHTSA, 2016).

### Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act was passed to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve

the energy performance of the federal government; and increase U.S. energy security, develop renewable fuel production, and improve vehicle fuel economy. The act included the first increase in fuel economy standards for passenger cars since 1975, and also included a new energy grant program for use by local governments in implemented energy-efficiency initiatives, as well as a variety of green building incentives and programs.

### State

#### Senate Bill 1389

Senate Bill (SB) 1389 (Public Resources Code Sections 25300–25323; SB 1389) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (Public Resources Code Section 25301(a)). The California Energy Commission's Integrated Energy Policy Report, undated annually, 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 [California Public Utilities Commission (CPUC), 2019].

In 2018, SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

The CEC and CPUC share responsibility for overseeing the implementation of California's RPS program. The CEC administers the program for publicly owned utilities. Similarly, the CPUC administers the RPS programs for the investor owned utilities, like SCE. 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 CO<sub>2</sub> 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 ZEVs (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 5 minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

## Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles.

In addition to limiting exhaust from idling trucks, in 2008, CARB approved the Truck and Bus regulation to reduce nitrogen oxides (NO<sub>X</sub>) and particulate matter (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. *CEQA Guidelines* Appendix F 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 s	afe and ord	erly commer	cial solar	development.
	U				

#### Policies

- Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.
- Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

### 4.6.4 Impacts and Mitigation Measures

### Methodology

This analysis addresses the project's potential energy usage, including electricity, natural gas, and transportation fuel. Energy consumption during both construction and operation is assessed. Specific analysis methodologies are discussed below. The assessment presented herein is based in part on the *Energy Study for the Pastoria Solar Project, Kern County, California* (Jacobs, 2019) prepared for the project. A full copy of the report is provided in Appendix F 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). Although electrical service will be established to serve construction, the amount of electricity that will be used is likely to be small. In addition, as water would be purchased from the Tejon-Castac Water District and would be supplied from irrigation supply turnouts within the project site on the property boundaries during construction of the project, no electricity use would be consumed by water pumping. Natural gas is not expected to be consumed during project construction (i.e., no natural gas-powered equipment or vehicles).

The analysis of energy usage during construction is limited to transportation fuels (i.e., petroleum). 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 project applicant (Jacobs 2019) and default assumptions from California Emissions Estimator Model (CalEEMod), version 2016.3.2. The estimated fuel economy for haul trucks and worker commute vehicles 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 fuel consumption during project construction was calculated by converting GHG emissions (i.e.,  $CO_2$  emissions) estimated for the project in the Air Quality Technical Report (see Appendix B), using the rate of  $CO_2$  emissions emitted per gallon of combusted gasoline (8.78 kilograms/gallon) and diesel (10.21 kilograms/gallon). The estimated fuel consumption was converted to British thermal units (Btu), assuming an energy intensity of 109,772 Btu per gallon of gasoline and 127,460 Btu per gallon of diesel.

Total fuel consumption (i.e. gallons of diesel fuel used) from construction equipment was estimated by using the horsepower rating, number of equipment used, usage hours, load factor, horsepower hours per day, and assuming an average of 17.33 miles per gallon (diesel) (Jacobs, 2019). Fuel consumption (i.e. gallons of gasoline used) from worker and vendor trips was estimated by using the number of workers, the total commute days, an average of 70 miles for the worker commute, and an average of 24.7 miles per gallon (gasoline) (Jacobs, 2019). Detailed construction equipment mix and vehicle trips are found in Appendix F of this EIR.

It is assumed that construction of the project would commence in 2021 and would last 12 to 14 months, ending in 2022 or 2023. Construction activities are expected to proceed as follows:

- Site Preparation. Excavation and grading will be minimal and staged to minimize dust, maintain existing drainage patterns, and ensure stability of the equipment installations. The constructor will mobilize construction: trailers, communications, water and temporary electrical power to the site.
- **Installation of Fencing.** The permanent security fence will be installed around the perimeter of the project site. The east and west halves of the site will be separately fenced. Fencing will be designed to allow movement of wildlife.
- Access Corridors. The access corridors will be built of compacted native material to provide access to the panels for maintenance.
- **Installation of the Solar Arrays and Inverters.** The solar trackers will be assembled and installed and the solar panels will be attached to them. Prefabricated vaults and slabs will be installed, or concrete slabs will be poured at the inverter locations, and the inverter equipment will be put in place.
- **Electrical Work.** Installation of the underground electric lines to connect the solar arrays with the inverters and overhead or underground lines to connect inverters to the substation.
- **Installation of the Substation and Transmission Interconnection.** The substation site will be fenced and covered in gravel and the substation equipment will be installed. The substation will then be connected directly to the gen-tie line leading to the Pastoria Energy Facility (PEF).

The cattle feeding/watering stations in the northwest quadrant will be removed. Because the site is already flat and has a relatively even surface, minimal grading and filling will be required over most of the site. The areas to be developed as access corridors will be smoothed and compacted. Grading and compaction will also be required at the inverter, energy storage, and substation sites to provide stable bases for the installation of equipment.

#### Operations

The project would operate unattended with minimal maintenance needs and so the use of energy resources during operations will be minor. A small amount of electricity will be needed to operate the project such as HVAC operation and emergency lighting for the substation and battery area). Retail service to serve operations will be provided by PG&E, the local retail electricity provider. This use would amount to an insignificant use for equipment (computer consoles, etc.) needed to operate the facility from a remote location when needed. There will be no occupied buildings and no onsite personnel requiring lights, heating and air conditioning or lighting for parking areas.

The project would not use natural gas for operations and also would not create demand for natural gas in other locations.

Transportation fuel use for the project would primarily be associated with motor vehicles (automobiles and light-duty trucks) traveling to and from the project site for periodic maintenance including panel washing. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. Based on conservative estimates for vehicular travel, the project is anticipated to have up to 180 trips per year during operation, accounting for the commutes and performance of regular inspection and maintenance activities by up to two employees. Water for washing the solar panels would consume about 250,000 gallons per washing. Panel washing would take place up to two times a year. This water would be purchased through the Tejon-Castac Water

District and would be trucked to the panel rows from the irrigation supply turnouts within the project site on the property boundaries. Similar to construction equipment and worker trips, fuel consumption for operation was estimated by using the horsepower, number of equipment/vehicles, days used per year, hours, load factor, and horsepower hours to arrive at the gallons of gasoline or diesel used.

### **Thresholds of Significance**

The Kern County CEQA Implementation Document and Kern County Environmental Checklist identify, per *CEQA Guidelines* Appendix G, 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

Electricity is not expected to be consumed in large quantity during project construction, as construction equipment and vehicles are not electric powered, but rather diesel- or gas-powered. The project is located in PG&E's service territory. Electric power for construction would be brought to the site through a new PG&E service connection. Although electrical service will be established to serve construction, the amount of electricity that will be used is likely to be small and to occur during off-peak times (morning and early afternoon). In addition, as water would be purchased from a local water purveyor during construction of the project, no electricity use would be consumed from water pumping. The electricity used for construction activities would be temporary and minimal. Therefore, impacts would be less than significant.

Natural gas is not required during construction of the project. Therefore, the would be no impacts related to natural gas during construction.

Petroleum would be consumed throughout construction of the project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and VMT associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities, and on-site haul trucks involved in relocating dirt around the project site would rely on diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed that construction workers would travel to and from the project site in gasoline-powered vehicles. As discussed above, fuel consumption from construction equipment was estimated by using the horsepower rating, number of equipment used, usage hours, load factor, horsepower hours per day, and an assumption of an average of 17.33 miles per gallon (diesel) to arrive at the gallons of diesel usage (Jacobs, 2019). Fuel consumption from worker and vendor trips was estimated by using the number of workers, the

total commute days, an average of 70 miles for the worker commute and a 24.7 miles per gallon (gasoline) to arrive at the gallons of gasoline used (Jacobs, 2019).

**Table 4.6-2**, *Project Construction Transportation Fuel Usage*, provides the estimated gasoline and diesel fuel use from construction equipment during construction of the project. As shown therein, construction activities are expected to consume approximately 150,146 gallons of gasoline and 146,368 gallons of diesel. This is 0.03 percent of Kern County's annual gasoline fuel use in 2018 and 0.05 percent of Kern County's annual diesel fuel use in 2018, respectively.

Source	Total Gallons of Gasoline Fuel	Total Gallons of Diesel Fuel
Total Fuel Consumption in Kern County 2018	454,498,680	308,064,466
Construction:		
Equipment and Haul Trucks		146,368
Workers	150,146	_
Total	150,146	146,368
Percent of County	0.03%	0.05%
SOURCE: Jacobs, 2019; ESA, 2020.		

 TABLE 4.6-2:
 PROJECT CONSTRUCTION TRANSPORTATION FUEL USAGE

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. Implementation of Mitigation Measure MM 4.3-5, as provided in Section 4.3, *Air Quality*, of this EIR, would require the use of energy-efficient and alternatively-fueled equipment during project construction. Implementation of Mitigation Measure MM 4.3-7 would 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. Implementation of these mitigation measures would also help to reduce unnecessary fuel consumption during project construction. Therefore, with implementation of mitigation measures the project would not result in the wasteful, inefficient, or unnecessary consumption of transportation fuels and impacts would be reduced to less than significant.

#### Operation

During project operation, the facility will be generating renewable energy. A limited amount of electricity will be needed to operate the project lights for the substation and battery area and to provide electricity for instrumentation and other small service loads associated with operations. The project is located in PG&E's retail electric service territory. Power for operations would be brought to the site through a new PG&E retail electric service connection.

Lighting for use in the substation would be used for security purposes and for use at times when night-time emergency repair work is required. The solar field itself would not require any lighting. There will be no

occupied buildings and no onsite personnel requiring lights, heating and air conditioning or lighting for parking areas. A small amount of electricity would be used for equipment (computer consoles, etc.) needed to operate the facility from a remote location when needed.

Although the project is currently used for agricultural purposes (grazing), the change in land use to a solar facility would not cause a significant change to the use of electricity in this location because the amount of electricity use for operations would be so small. Moreover, the electricity generation on the project site would assist the State in meeting obligations under the RPS and other renewable energy and greenhouse gas reduction goals by providing a renewable energy alternative to the existing power mix. Therefore, due to the limited amount of electricity use on the project site during operations and the inherent nature of the project as a renewable energy development, the project would not result in a wasteful use of energy. Therefore, impacts related to operational electricity use would be less than significant.

The project would not use natural gas for operations and also would not create demand for natural gas in other locations. As the project would not require any natural gas usage, the project would not result in the wasteful use of energy. Therefore, impacts related to operational natural gas use have not been calculated.

Transportation fuel use for the project would primarily be associated with motor vehicles (automobiles and light-duty trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. As discussed above, based on conservative estimates for vehicular travel, the project is anticipated to have up to 180 trips per year during operation, accounting for the commutes and performance of regular inspection and maintenance activities by up to two employees. Use of a mower and panel washer throughout the duration of the project's operation would be required. Similar to construction equipment and worker trips, fuel consumption for operation was estimated by using the horsepower, number of equipment/vehicles, days used per year, hours, load factor, and horsepower hours to arrive at the gallons of gasoline or diesel used.

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 a total of 510 gallons of gasoline and 3,298 gallons of diesel. This is 0.0001 percent of Kern County's annual gasoline fuel use in 2018, and 0.001 percent of Kern County's annual diesel fuel use in 2018. Over the lifetime of the project, the fuel efficiency of the vehicles being used by the employees is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB, 2017). As such, operation of the project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy. Although the project would increase petroleum use during operation as a result of employees traveling to and from the project site, the use would be a small fraction of the Countywide use and, due to efficiency increases, would likely diminish over time. Given these considerations, petroleum consumption associated with the project would not be considered inefficient or wasteful and would result in a less than significant impact.

Source	Total Gallons of Gasoline Fuel	Total Gallons of Diesel Fuel	
Total Fuel Consumption in Kern County 2018	454,498,680	308,064,466	
Workers	510	3,298	
Total	510	3,298	
Percent of County	0.0001%	0.001%	
SOURCE: Jacobs. 2019: ESA. 2020.			

#### TABLE 4.6-3: PROJECT OPERATIONAL ENERGY USAGE

#### Mitigation Measures

Implementation of Mitigation Measures MM 4.3-5 and MM 4.3-7, would be required (see Section 4.3, *Air Quality*, of this EIR, for full mitigation measure text).

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.3-5 and MM 4.3-7, 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 5 minutes at a location and the phase-in of off-road emission standards that result in an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. Although these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in the efficient use of construction-related energy.

#### Operation

In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the 33 percent RPS by 2020 and 50 percent by 2030. In addition, the 2017 Scoping Plan relies on achievement of the RPS target of 50 percent of California's energy coming from renewable sources by 2030. SB 100 further increased California's RPS and required retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045. The project and other similar projects are essential to achieving the RPS. Further, as discussed previously, the project is reasonably expected to displace region-wide and statewide emissions of GHGs over the expected life of the project. The reduction in GHG emissions are a direct result of increasing the share of renewable energy available to investor-owned utilities required to meet RPS. The project directly aligns with the goals of RPS by generating renewable electricity annually.

Furthermore, the project would include the development a solar facility and associated infrastructure with the capacity to generate up to 115 MW of renewable electric energy and battery energy storage modules. As such, the project would be consistent with the Attorney General's recommended measures to reduce GHG emissions. Specifically, the project complies with the Attorney General's Recommended Measure to "Install solar and wind power systems, solar and tank less hot water heaters, and energy-efficient heating ventilation and air conditioning." Therefore, the project would be compliant with the Attorney General's Recommended Measure regarding renewable energy. Because the project is below regional regulatory thresholds and could result in a reduction of GHG emissions, no mitigation measures are required.

California's most important statewide energy planning document is the California Energy Commission's biennial Integrated Energy Policy Report (IEPR). The 2019 IEPR (CEC, 2020), highlights in particular the importance of California "leading the way" to reducing the reliance on fossil fuels by increasing the use of clean, renewable energy, consistent with the utility renewable portfolio standards.

Overall, because one of the objectives of the project is to assist California in meeting its GHG emissions reduction goals by 2020 and 2030 as required by the California Global Warming Solutions Act (AB 32), as amended by SB 32 in 2016, the project would be compliant with the applicable recommended actions of the CARB Climate Change Scoping Plan, as well as, applicable federal, state and local policies. Specifically, the project would assist the State and electricity 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. Cumulative projects are listed in Chapter 3, *Project Description*, Table 3-3, *Cumulative Projects List*. The two cumulative projects listed include a surface mining expansion project and the Grapevine Specific & Community Plan. The proposed Grapevine Specific & Community Plan, an 8,010-acre multi-use residential, commercial, and industrial development located near the project has the potential for significant energy use. If permitted and constructed, the cumulative project would involve a significant use of energy by up to 12,000 residential units at full build-out, and would be constructed in accordance with applicable building efficiency standards.

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. Construction transportation fuel use would be finite and temporary and would cease at the end of construction activities. The project's operational emissions would only contribute to a minor increase in emissions in the transportation sector. Energy use by the project will be so limited that it would not combine incrementally with that of the Grapevine Specific & Community Plan to create a cumulatively significant impact. In addition, the project involves generation of clean, renewable energy resources that will lower the dependence on fossil fuels. However, as project construction may coincide with the development of the related projects discussed above, transportation fuel use during construction could contribute to the increase in transportation fuel use.

Although project construction would result in a contribution to cumulative transportation fuel consumption in California, construction of the project would implement Mitigation Measures MM 4.3-5 and MM 4.3-7, as provided in Section 4.3, *Air Quality*, of this EIR, which would require the use of energy-efficient equipment during construction and enforce idling restrictions. Implementation of these mitigation measures would also help to reduce unnecessary fuel consumption during project construction. Overall, with implementation of mitigation measures during construction, the project would not contribute to cumulative energy consumption in California during construction; with regard to operation, as 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, and would not conflict with any renewable energy plans. Cumulative impacts would be less than significant.

#### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.3-5 and MM 4.3-7, would be required (see Section 4.3, *Air Quality*, of this EIR, for full mitigation measure text).

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.3-5 and MM 4.3-7 impacts would be less than significant.

### 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 *Soils Analysis Study* (Jacobs, 2019a), the *Geotechnical Engineering Report* (Terracon, 2019), and the *Paleontological Resources Assessment* (Jacobs, 2019b). These reports are provided in Appendix G Appendix H, and Appendix I of this EIR, respectively.

### 4.7.2 Environmental Setting

### **Regional Geologic Setting**

The project site is located in the very southern portion of what is known as the Great Valley geomorphic province. The geologic features of this province are characterized by thick alluvial deposits in a wide and long structural trough bounded by the Sierra Nevada and Coast Range mountain ranges. The southern part of the province is defined by the San Joaquin Valley which is drained by the San Joaquin River (California Geological Survey [CGS] 2002). The Tehachapi Mountains mark the southern boundary of the province which is not far from the intersection of the San Andreas and Garlock faults. The Garlock Fault is a major strike-slip fault that is oriented in a roughly east-west direction. 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. The project site is not intersected by any known faults but is located in a region considered seismically active.

### **Paleontological Setting**

Paleontological resources are the mineralized (fossilized) remains of prehistoric plants and animals and the mineralized impressions (trace fossils) left as indirect evidence of the forma and activity of such organisms. These resources are located within sedimentary rocks or alluvium and are considered to be nonrenewable.

Formations that contain vertebrate fossils are considered more sensitive because vertebrate fossils tend to be rare and fragmentary. Formations containing microfossils, plant casts, and invertebrate fossils are more common. A significant fossil deposit is a rock unit or formation that contains significant nonrenewable paleontological resources. This is defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces, and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information (ichnites and trace fossils generated by vertebrate animals such as trackways or nests and middens), which provide datable material and climatic information. This definition excludes invertebrate or botanical fossils except when present within a given vertebrate assemblage. However, invertebrate and botanical fossils may be significant as environmental indicators associated with vertebrate fossils. Surficial geological mapping indicates the majority of the project area is underlain by Quaternary Pleistocene (2.6 million to 11,700 years ago) and Holocene age (11,700 years ago to present) alluvium and stream deposits that are part of alluvial fans extending from the Tehachapi and San Emigdio mountains (Jacobs, 2019b). The alluvial deposits are relatively shallow near the mountain fronts and increase in thickness towards the valley axis. Tertiary age (66 to 2.6 million years ago) sedimentary and volcanic rocks extend northward from the basement rocks of the Tehachapi and San Emigdio mountains.

### **Existing Paleontological Resources**

The paleontological resources analysis (Jacobs, 2019b) included a review of published geologic maps, paleontological locality search by the Natural History Museum of Los Angeles County (LACM), a paleontological locality search using the University of California Museum of Paleontology online database, and a review of published paleontological reports to determine if the geologic units present within the project area typically yield paleontological resources. As geologic formations and units can be exposed over large geographic areas but contain similar lithologies and fossils, the literature review and fossil locality search includes localities outside the project area. As mentioned above, the geologic map and literature review indicates the project site is largely underlain by Holocene-Pleistocene-aged Quaternary alluvium.

The LACM records search conducted for the project indicates no vertebrate fossil localities have been previously recorded within the project site (Jacobs, 2019b). While no paleontological localities were reported from the project site, the LACM reported several fossil localities within the area from the same or similar deposits that could underlie the project site. Due to their relatively young age, Quaternary alluvial and sand deposits have low paleontological sensitivity on the surface. Older Quaternary alluvial and sand deposits at greater depths have high paleontological sensitivity.

In a database review of fossil locality records from the Pleistocene and Holocene alluvial fan deposits, a total of 21 records were found in Kern County in the region of the project site (Jacobs, 2019b). The majority of these are from the McKittrick Tar Pits located approximately 50 miles to the northwest of the project area. The fossils recovered include invertebrates, plants, mammals, birds, reptiles, and amphibians. The closest locality was found at the Arvin Landfill (V93068), located approximately 18 miles to the northeast. Other fossil locality records were found in the Bena Conglomerate, Tecuya Formation, and Tejon Formation; however, given their inclination and distance from the project footprint, these units are unlikely to be encountered during project activities (Jacobs, 2019b).

### **Local Geologic Setting**

### Local Geology

The geotechnical investigation for the project site included the collection of site specific data through geotechnical borings and laboratory analysis of collected soil samples (Terracon, 2019). Subsurface soil conditions are characterized by loose to very dense sand with variable amounts of silt and clay to the maximum depth explored of 41.5 feet below ground surface (bgs) (Terracon, 2019). Interbedded layers of sandy lean clay were also encountered in a few of the borings across the site. Groundwater was not encountered in the borings that were drilled; however, groundwater levels do have seasonal variations. According to a review of well data for the area, one well located approximately 1 mile northeast of the

project site had a depth to water of greater than 100 feet bgs in the period between February 2017 and October 2019 (Terracon, 2019).

#### **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 site 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 Pleito fault and is approximately 2 miles west of the project site (Jennings, 2010).

#### **Ground Shaking**

Faults located within the project site vicinity have the potential to cause ground shaking 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 faults with the most likely potential to effect the site from a design standpoint, are the Pleito (2 miles away), Garlock (5 miles away), and San Andreas (6 miles away) faults, shown in **Figure 4.7-1**, *Faults in the Vicinity of the Project Site*, due to their relatively close locations and earthquake magnitude potential. The Garlock has a maximum moment magnitude earthquake potential of 7.1, which is enough to cause substantive groundshaking at the site. However, seismic events on other active faults of the region would also have the potential to cause groundshaking at the project site.

Earthquake (Year)	Approximate Distance to Project Site (miles)	Earthquake Magnitude
Mojave (1992)	35	5.7
Tejon Ranch (1988)	25	5.4
Kern County (1952)	35	7.5
Ridgecrest (2019)	90	7.1, 6.4, and 5.4
SOURCE: SCEDC, 2020.		

 TABLE 4.7-1:
 HISTORIC EARTHQUAKES IN PROJECT AREA VICINITY

Table 4.7-1 shows some of the significant historical earthquakes that have occurred in the region and their magnitudes.

#### Landslides

The project site is relatively flat with an approximate grade of 2 percent, no substantive slopes, and low landslide potential.





#### FIGURE 4.7-1: FAULTS IN THE VICINITY OF THE PROJECT SITE

### Liquefaction and Lateral Spreading

Liquefaction is a type of ground failure resulting from the generation of high porewater pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. Liquefaction potential is considered highest when saturated loose soils are found within 50 feet of ground surface. According to nearby well data, groundwater levels in the area were reportedly greater than 100 feet bgs in the period between 2017 and 2019 (Terracon, 2019). Based on the anticipated depth of groundwater and subsurface conditions, the potential for liquefaction at the project site is considered low (Terracon, 2019). Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also considered low (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 soils report for the project site, the Natural Resources Conservation Service (NRCS) soil mapping indicates that the soils onsite are primarily sandy loams, which have a very low risk for expansion (Jacobs, 2019a). Only one mapping unit onsite, Pleito sandy clay loam, included a clay component, but the mineralogy of that soil does not include the contents that would make it likely susceptible to expansion (Jacobs, 2019a).

### Soil Erosion

Soil erosion is the wearing away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind and subsurface water flow. Excessive soil erosion can eventually lead to damage of building foundations and roadways. In general, areas that are most susceptible to erosion are those that would be exposed during the construction phase when earthwork activities disturb soils and require stockpiling. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or slope protection, however changes in drainage patterns can also cause areas to be susceptible to the effects of erosion. There are many factors contributing to soil erosion. High soil erodibility contributes to high erosion rates. Soils containing high silt content have the highest soil erodibility since they are easily detached, tend to crust and produce high rates of runoff. Coarse textured soils, or sandy soils, are easily detached but typically do not produce a lot of runoff, so they have low soil erodibility.

Six different soils types have been mapped for the project site according to the NRCS (Jacobs, 2019a). These soil units include the Hesperia sandy loam, Psamments-Xerolls complex, Guijarral-Klipstein, Premier sandy loam, Plieto sandy clay loam, and Laval-Pleitito complex (Jacobs, 2019a). These soil units are considered to be very deep, greater than 6 feet bgs, with little likelihood of any shallow restrictive layers. Data was only available for two of the soil units (Hesperia and Psamments-Xerolls complex) which were found to have a moderate to high susceptibility for water erosion. Susceptibility for wind erosion for these same units were also considered moderate to high. Since the project site has minimal to no vegetation cover, erosion potential is slightly higher than it would be if it was densely vegetated.

#### 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 some areas of the San Joaquin Valley between Merced and north of Bakersfield and a large area south of Bakersfield that does not extend to the project site (Farr, Jones, Liu, 2016).

### Soil Collapse

Collapsible soils consist of loose, dry, low-density materials that collapse, compact and change in settlement under the addition of water or excessive loading, often resulting in severe damage to structures. These soils are distributed throughout the southwestern United States, specifically in areas of young alluvial fans, debris flow sediments, and loess (wind-blown sediment) deposits. Surface soils on the project site include alluvium that has been used for grazing and are unlikely to be susceptible to collapse.

### 4.7.3 Regulatory Setting

Geologic resources and geotechnical hazards are governed primarily by local jurisdictions. The conservation elements and seismic safety elements of city and county general plans contain policies for the protection of geologic features and avoidance of hazards.

The California Environmental Quality Act (CEQA) is the major environmental statute that guides the design and construction of projects on nonfederal lands in California. This statute establishes a specific process for environmental impact analysis and public review. In addition, the project proponent must comply with other applicable federal, State, and local statutes, regulations, and policies. Relevant and potentially relevant statutes, regulations, and policies are discussed below.

### Federal

### **Clean Water Act (Erosion Control)**

The Federal Clean Water Act (CWA) (33 USC 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point-source and certain nonpoint-source discharges to surface water. Such discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). Projects that disturb 1 acre or more are required to obtain NPDES coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit), Order No. 2009-0009-DWQ. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which includes best management practices (BMPs) to regulate stormwater runoff, including

measures to prevent soil erosion. Requirements of the CWA and associated SWPPP are described in further detail in Section 4.10, *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 postearthquake 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 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 Public Resources Code Chapter 7.8, Division 2, the 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 International Building Code (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 7-16, *Minimum Design Loads for Buildings and Other Structures*,

provides requirements for general structural design and includes means for determining earthquake loads (which is defined as 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) 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 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 CBC Chapter 16. CBC Chapter 18 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 Section 5097.5 and Section 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

### California State Regional Water Quality Control Board, Stormwater General Construction Permit

The five-member California State Water Resources Control Board (SWRCB) allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine Regional Water Quality and Control Boards (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 Storm Water Discharges Associated with Construction Activities (Construction Activities General Permit) (SWRCB Order No. 2012-0006-DWQ, NPDES No. CAS000002). The General Construction Permit requires that construction sites with 1 acre or greater of soil disturbance, or less than 1 acre but part of a greater common plan of development, apply for coverage for discharges under the General Construction Permit by submitting a Notice of Intent for coverage, developing an SWPPP, and implementing best management practices to address construction site pollutants.

The SWPPP should contain a site map(s) that 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 an 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

#### Kern County General Plan

Construction and operation of the solar facility and battery energy storage system (BESS) would be subject to policies and regulations contained within the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies pertaining to the avoidance of geologic hazards and/or the protection of unique geologic features, as well as policies for the preservation of paleontological resources. The policies, goals, and implementation measures in the Kern County General

Plan for geology and soils that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

#### Chapter 1: Land Use, 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

#### 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.

### 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, 2019 Edition, with some modifications and amendments. Kern County has made local modifications, additions and amendments to the codes as allowed, which were determined reasonably necessary because of local climatic, geological, or topographical conditions which are prescribed in Title 17 of the Ordinance Code. The County's Code of Building Regulations applies to grading, new building construction and to the installation of new mechanical, plumbing, and electrical systems.

#### Chapter 17.28: Kern County Grading Code

The purpose of the Kern County Grading Code (Chapter 17.28, Building Code, of the Kern County Code of Regulations) sets forth rules and regulations to control excavation, grading and earthwork construction,

including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction. Sections of the Grading Code that are particularly relevant to geology and soils are provided below.

#### Section 17.28.140: Erosion Control

- A. Slopes. The faces of cut-and-fill slopes shall be prepared and maintained to control erosion. This control may consist of effective planting. Protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.
- B. Other Devices. Where necessary, check dams, cribbing, riprap, or other devices or methods shall be employed to control erosion and provide safety.
- C. Temporary Devices. Temporary drainage and erosion control shall be provided as needed at the end of each work day during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

#### Section 17.28.170: Grading Inspection

- A. General. All grading operations for which a permit is required shall be subject to inspection by the building official. Professional inspection of grading operations and testing shall be provided by the civil engineer, soils engineer, and the engineering geologist retained to provide such services in accordance with Subsection 17.28.170(E) for engineered grading and as required by the building official for regular grading.
- B. Civil Engineer. The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade, and surface drainage of the development area. If revised plans are required during the course of the work, they shall be prepared by the civil engineer.
- C. Soils Engineer. The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall include observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this chapter. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the building official and the civil engineer.
- D. Engineering Geologist. The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.
- E. Permittee. The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this Code, and the permittee shall engage consultants, if required, to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the

building official. In the event of changed conditions, the permittee shall be responsible for informing the building official of such change and shall provide revised plans for approval.

- F. Building Official. The building official may inspect the project at the various stages of the work requiring approval to determine that adequate control is being exercised by the professional consultants.
- G. Notification of Noncompliance. If, in the course of fulfilling their responsibility under this chapter, the civil engineer, the soils engineer, or the engineering geologist finds that the work is not being done in conformance with this chapter or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the building official. Recommendations for corrective measures, if necessary, shall also be submitted.
- H. Transfer of Responsibility. If the civil engineer, the soils engineer, or the engineering geologist of record is changed during the course of the work, the work shall be stopped until:
  - 1. The civil engineer, soils engineer, or engineering geologist, has notified the building official in writing that they will no longer be responsible for the work and that a qualified replacement has been found who will assume responsibility.
  - 2. The replacement civil engineer, soils engineer, or engineering geologist notifies the building official in writing that they have agreed to accept responsibility for the work.

### Kern County Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses.

The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for projects with construction disturbing 1 acre or more within Kern County. This form requires the applicant to provide background information on construction activities and to identify whether stormwater runoff has the potential of discharging into waters of the United States, be contained on-site, or discharge indirectly off-site to a river, lake, stream, or off-site drainage facility. Should stormwater runoff be contained on-site and not discharge into any waters, no special actions are required. Should stormwater runoff discharge into waters of the United States, compliance with the State Water Resources Control Board (SWRCB) Construction General Permit is required, which requires preparation of an SWPPP. Should stormwater runoff not drain to waters of the United States (e.g., drains to a terminal drainage facility), the applicant would be required to develop an SWPPP and BMPs. Projects disturbing at least 1 acre of soil in Kern County are required to apply for a County NPDES Storm Water Program Permit. Prior to issuance of the permit, Kern County Engineering, Surveying and Permit Services must verify the applicant's stormwater plans. Applicants must apply for the permit under one of the following four conditions:

- 1. All stormwater is retained onsite and no storm water runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.
- 2. All stormwater runoff is not retained on site, but does not discharge to a Water of the United States (i.e., drains to a terminal drainage facility). Therefore, an SWPPP has been developed and BMPs must be implemented.

- 3. All stormwater runoff is not retained on site, and the discharge is to a Water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control Board prior to issuance of the building permit. Also, an SWPPP has been developed and BMPs must be implemented.
- 4. Construction activity is between 1 and 5 acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

### 4.7.4 Impacts and Mitigation Measures

### Methodology

Potential significant impacts associated with the project site were identified based on a review of available literature, the *Soils Analysis Study* (Jacobs, 2019a), the *Geotechnical Engineering Report* (Terracon, 2019), and the *Paleontological Resources Assessment* (Jacobs, 2019b) which present 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, as well as available data, including the Kern County General Plan. These reports are provided in Appendix G, Appendix H, and Appendix I of this EIR, respectively.

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 *CEQA Guidelines* Appendix G, 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; or
- Landslides.
- b. Result in substantial soil erosion or the loss of topsoil;
- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater; or
- f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

### **Project Impacts**

# Impact 4.7-1: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo earthquake fault zoning map issued by the state geologist for the area or based on other substantial evidence of a known fault.

Primary fault rupture is ground deformation that occurs along the surface trace of the causative fault during an earthquake. The project would introduce people to the project site (construction workers and periodic maintenance workers during operation) and could thus expose people and structures to seismic risks. While the project site is located in the highly seismic southern California region within the influence of multiple faults, the project site is not located within or within close proximity to a State of California Alquist-Priolo Earthquake Fault Zone. As previously discussed, the nearest Earthquake Fault Zone as delineated by the Alquist-Priolo Earthquake Fault Zoning Act, is associated with the Pleito fault and is approximately 2 miles west of the project site (Jennings, 2010). Due to the distance of this fault, fault rupture would not likely occur.

In addition, construction of the project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2019 Edition (CCR Title 24), which incorporates substantially the same requirements as the IBC, 2015 Edition, with some modifications and amendments. Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with the project. Based on the absence of any known active faults within or within close proximity the project site, and the project compliance with applicable ordinances of the Kern County Building Code, impacts related to fault rupture would be less than significant.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

### Impact 4.7-2: The project would directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: strong seismic ground shaking.

As stated previously, the project site is in a highly seismic region that could experience one or more substantive seismic events in the future. Depending on the magnitude, distance to the source, and duration of shaking, damage to the PV modules, or other ancillary facilities and injury to workers or visitors could result.

However, 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. The CBC contains seismic safety provisions with the aim of preventing building collapse and structural damage during an earthquake. In addition, as described below, Mitigation Measure MM 4.7-1 requires that a final design level geotechnical study evaluating soil conditions and geologic hazards be performed by a qualified geotechnical engineer on the project site. Mitigation Measure MM 4.7-2 requires that a California geotechnical engineer be hired by the proponent to design the project facilities to withstand probable seismically induced ground shaking. All grading and construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the seismic recommendations provided by the California-registered professional engineer in accordance with California and Kern County Building Code requirements. The required measures would encompass site preparation, foundation specifications, and protection measures for buried metal. The final structural designs would be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements would be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design would be submitted to the Kern County Planning and Natural Resources Department. Further, the facilities would be constructed in accordance with all applicable codes, which require property line and public roadway setbacks that would protect the general public and onsite staff from potential hazards associated with the facilities that could result from an earthquake. Required compliance with the Kern County Building Code, the CBC, and implementation of Mitigation Measures MM 4.7-1 and MM 4.7-2 would ensure that seismic hazards would be minimized; impacts related to ground shaking would be less than significant.

#### **Mitigation Measures**

- **MM 4.7-1:** Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a full geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it to the Kern County Public Works Department for review and approval.
  - a. The geotechnical study must be signed by a California-registered and licensed professional geotechnical engineer or engineering geologist and must include, but not be limited to, the following:
    - i. Location of fault traces and potential for surface rupture and ground shaking 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.
- c. 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 or mitigated.
- **MM 4.7-2:** Prior to the issuance of grading permits, the project proponent shall retain a California registered and licensed geotechnical engineer to design the project facilities to withstand probable seismically induced ground shaking at the site. All grading and construction on site shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California-registered professional engineer.
  - a. The procedures and site conditions shall encompass site preparation, foundation specifications, and protection measures for buried metal.
  - b. The final structural design shall be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements shall be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the Kern County Planning and Natural Resources Department.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 and MM 4.7-2, impacts would be reduced to a less-than-significant level.

# 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.

The proximity of existing active faults to the project site presents the potential for seismic ground shaking, which could result in damage to structures and associated improvements if underlain by subsurface materials susceptible to liquefaction. Should liquefiable materials be present at the project site, damage to

the photovoltaic (PV) modules and other ancillary facilities could result, and construction workers and employees could be exposed to potential adverse effects.

According to the Geotechnical Engineering Report, groundwater fluctuates; however, data from a nearby well indicates that historic groundwater levels were recorded at greater than 100 feet bgs. In general, saturated unconsolidated sediments would be needed to be present within the upper 50 feet of ground surface to be considered potentially liquefiable. Shallow groundwater is not expected on the project site and the project site is not mapped for liquefaction hazards by CGS. In addition, the project operator would be required to evaluate the potential for liquefaction in accordance with all applicable ordinances of the Kern County Building Code (Chapter 17.08) and the CBC in a final design level geotechnical report. The Kern County Engineering, Surveying and Permit Services Department requires the submittal of three sets of plans to the building department for review and approval prior to the issuance of a building permit; County review would ensure compliance with applicable standards. All grading and construction on site would be fully compliant with the seismic recommendations provided by a California-registered professional engineer in accordance with California and Kern County Building Code requirements.

Although potential impacts from liquefaction are unlikely (as discussed above); adherence to the requirements of the Kern County Building Code, and the CBC would ensure that effects from seismic-related ground failure including the potential for liquefaction would be further minimized. The facility would be constructed in accordance with all applicable codes. Therefore, personnel present during the construction and operation phases of the proposed project would not be exposed to a substantial increase in seismic-related ground failure hazards as a result of project implementation. Implementation of these building code requirements and local agency enforcement would reduce impacts to less-than-significant levels.

#### **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.

The project site is relatively flat with an approximate grade of 2 percent and no substantive slopes. The project site is not expected to have a landslide potential. Therefore, development of the project would not directly or indirectly cause potential substantial adverse effects, including risk of loss, injury or death involving landslides. No impacts would occur.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

No impact.

# 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.

Construction of the project and associated improvements would involve earth-disturbing activities that could expose soils to the effects of wind or water erosion. Although the project site and surrounding study area consists of relatively flat topography and would not involve substantive cut and fill operations, earthmoving and construction activities could loosen soil, and the removal of existing minimal vegetation could contribute to soil loss and erosion. Since the project would not contain all stormwater runoff onsite, an SWPPP would be prepared and implemented per the requirements of the NPDES General Construction Permit Program. The SWPPP would detail that existing vegetation and topography are to be preserved to the maximum extent possible. The SWPPP would also specify various types of BMPs including erosion control BMPs to prevent soil from moving offsite; all temporary erosion control measures required by the Kern County Grading Code (Chapter 17.28.140) would be incorporated into the SWPPP, as required by Mitigation Measure MM 4.7-3. In addition, per Mitigation Measure MM 4.7-4, the project would be required to submit grading plans accompanied by a soils engineering report, engineering geology report, and drainage calculations pursuant to the Kern County Grading Code (Section 17.28.070) to the Kern County Engineering and Survey Services Department in order to obtain required grading permits. Compliance with MM 4.7-4 would ensure that excessive grading does not occur. As a result, project construction would have less-than-significant impacts related to erosion with implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4.

Project operations would include the periodic cleaning of the panels with water. However, this is not expected to result in soil erosion because of the 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 require ground disturbance. As a result, project operation would have a less-than-significant impact as it relates to soil erosion.

#### Mitigation Measures

- **MM 4.7-3:** The construction contractor shall incorporate Best Management Practices consistent with the National Pollutant Discharge Elimination System General Construction Permit Program for all construction projects that would not retain all stormwater onsite and the Kern County Grading Code. The project proponent shall prepare an Erosion and Sedimentation Control Plan as well as a Stormwater Pollution Prevention Plan. The Stormwater Pollution Prevention Plan beyeloper and submitted for review and approval by the applicable Regional Water Quality Control Board. The Stormwater Pollution Prevention Plan Best Management Practices shall include, but not be limited to, the following:
  - Scheduling to avoid ground disturbance during rain events to the maximum extent possible
  - Preservation of existing vegetation and topography to the maximum extent practicable
  - Stabilized construction entrances and exits
  - Erosion control (including all pertinent temporary erosion control practices as specified in Chapter 17.28.140 of the Kern County Grading Code), such as mulching, temporary drains and cullies, sandbag barrier, geotextiles and mats, silt fences, brush or rock filters, earth dikes, straw bale barriers, and sediment traps
- Sediment control
- Waste management
- Good housekeeping
- Post-construction site stabilization
- Prior to initial construction mobilization, preconstruction surveys shall be performed and sediment and erosion controls shall be installed in accordance with the approved Stormwater Pollution Prevention Plan. A copy of the approved Stormwater Pollution Prevention Plan shall be submitted to the Kern County Planning and Natural Resources Department.
- **MM 4.7-4:** The project proponent shall limit grading to the minimum area necessary for construction. Prior to the initiation of construction, the project proponent shall retain a California registered and licensed professional engineer to submit final grading earthwork and foundation plans to the Kern County Public Works for approval.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4, 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.

Due to the flat topography of the project site, the risk of on-site or off-site landslides associated with development of the project is considered negligible.

According to the Geotechnical Engineering Report, groundwater fluctuates; however, data from a near-by well indicates that historic groundwater levels were recorded at greater than 100 feet bgs. In general, saturated unconsolidated sediments would be needed to be present within the upper 50 feet of ground surface to be considered potentially liquefiable. Shallow groundwater is not expected on the project site and the project site is not mapped for liquefaction hazards by CGS. Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also considered low (Terracon, 2019).

Land subsidence in the area of the project site could result from excessive pumping of the underground aquifer. Water for washing the solar panels (about 250,000 gallons per washing; up to two times per year), will be purchased through the Tejon Castac Water District (TCWD) and will be served to the project through an existing TCWD turnout along the project boundary. Pumping of the aquifer could occur in support of intensive agriculture around the project site that could result in land subsidence (Jacobs, 2019a). However, those wells would have to be very close to the project boundaries because land subsidence generally occurs near the location of excessive groundwater withdrawals. Groundwater pumping may occur near the site boundary for nearby agricultural purposes, but at levels too small to contribute significantly to subsidence (Jacobs, 2019a). A review of the aerial imagery for this area shows the presence of agricultural water supply canals to the north of the project site. These are the most likely sources for water supplies for the intensive agriculture (orchards and vineyards) used in the surrounding land uses. For this reason, the potential risk for land subsidence is considered to be low to negligible.

The potential for collapse was also determined be negligible by the Soils Analysis Study (Jacobs, 2019a), but one consolidation test determined a moderate collapse potential at an approximate depth of 2.5 feet bgs due to silty sand soils encountered at this depth (Terracon, 2019). This finding was at odds with other observations made during drilling that suggests the sample was disturbed and not fully indicative of collapse potential (Terracon, 2019). While this measured collapse is considered an outlier, implementation of Mitigation Measure MM 4.7-1 would require a design level geotechnical investigation, which would include further pre-construction subsurface exploration to confirm the subsurface conditions. 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 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 final geotechnical study required by Mitigation Measure MM 4.7-1 would be prepared for the project to identify and remedy any soil conditions considered to be geologic hazards, including liquefaction, collapse and subsidence, the proposed improvements would be ensured of being located on stable subsurface soils. 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**

Implementation of Mitigation Measure MM 4.7-1 would be required.

#### 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 soils report for the site concluded that based on NRCS soil mapping data, the predominant soils of the area are sandy loams. Only one of the six soil units at the site has a clay component and yet that soil unit does not contain the mineralogy that would be associated with expansion (Jacobs, 2019a). The shrink swell behavior of expansive soils can lead to damage of project improvements over time if not addressed appropriately prior to construction. However, as described above, Mitigation Measure MM 4.7-1 requires that a geotechnical study to evaluate soil conditions and geologic hazards be performed by a qualified geotechnical engineer on the project site. Mitigation Measure MM 4.7-1 requires that a California geotechnical engineer include an evaluation for expansive soils and provide recommendations consistent with CBC requirements to reduce potential adverse effects from expansive soils. All grading and construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the recommendations provided by the California-registered professional engineer in accordance with California and Kern County Building Code requirements. The required measures would encompass site preparation such as treatment of expansive soils or replacement with engineered fill. The final designs would be subject to approval and follow-up inspection by the Kern County Building Inspection Department. Final design requirements would be provided to the onsite construction supervisor and the Kern County Building Inspector to ensure compliance. Therefore, with implementation of Mitigation Measure MM 4.7-1, impacts would be less than significant.

#### **Mitigation Measures**

Implementation of Mitigation Measure MM 4.7-1 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 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 would use portable bathroom facilities to accommodate onsite workers and no wastewater disposal facilities including septic systems would be necessary. Therefore, no potential for impacts related to the onsite soils ability to support a septic system would be present.

#### Mitigation Measures

No mitigation would be required.

#### Level of Significance

No impact.

# Impact 4.7-9: The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Most of the surficial deposits within the project site consist of low-sensitivity Holocene- to Pleistocene-age Quaternary alluvium which is typically not paleontologically sensitive, but may be underlain by older Quaternary alluvium, likely present at depths of greater than 5 feet, which has a higher potential to contain paleontological resources (Jacobs, 2019b). Based on the paleontological records search performed for the project site, and geological map and paleontological literature review, the project site is considered to have low paleontological sensitivity on the surface (between 0 and 5 feet deep), and high paleontological sensitivity in deeper soils (greater than 5 feet deep). While other geologic units with undetermined or high paleontological potential (Bena Conglomerate, Tecuya and Tejon formations) are unlikely to be encountered given their inclination and distance from the proposed project footprint, it cannot be entirely ruled out of possibility. The actual depth and attitude of the geologic unit may vary significantly within the subsurface across a site. Therefore, there is a potential for encountering previously undiscovered paleontological resources during subsurface excavations.

If significant vertebrate fossils are encountered during project implementation, disturbance of such resources would result in a potentially significant impact to paleontological resources. Therefore, excavations within older Quaternary alluvium could impact significant vertebrate fossil resources and would be considered a potentially significant impact to paleontological resources. However, with implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7, which would require Paleontological Resources Awareness Training for construction workers, use of a qualified paleontological monitor during construction activities, and appropriate treatment of inadvertently uncovered paleontological resources, impacts to paleontological resources would be reduced to less than significant.

#### **Mitigation Measures**

- **MM 4.7-5:** The project proponent shall retain a qualified paleontologist, defined as a paleontologist meeting the Society for Vertebrate Paleontology's Professional Standards (Society for Vertebrate Paleontology, 2010), to carry out all mitigation measures related to paleontological resources. The qualified paleontologist and the Lead Archeologist may be the same individual:
  - a. Prior to the start of any ground disturbing activities, the qualified paleontologist shall prepare a Paleontological Resources Awareness Training program for all construction personnel working on the project. A Paleontological Resources Awareness Training Guide approved by the qualified paleontologist shall be provided to all personnel. A copy of the Paleontological Resources Awareness Training Guide shall be submitted to the Kern County Planning and Natural Resources Department. The training guide may be presented in video form.
  - b. Paleontological Resources Awareness Training may be conducted in conjunction with the archaeological resources training required by Mitigation Measure MM 4.5-1 presented in Section 4.5, Cultural Resources.
  - 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 fossil collecting or intentional disturbance of paleontological resources.
  - d. The project operator shall ensure all new on-site construction personnel who have not participated in earlier Paleontological Resources Awareness 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 4.7-6:** During construction the qualified paleontologist or designated monitor shall monitor all ground-disturbing activity (with the exception of vibratory or hydraulic installation of tracking or mounting structures and foundations or supports) that occurs at a depth of 5 feet or deeper below ground surface:
  - 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 monitoring, the paleontologist shall prepare a report documenting the absence or discovery of fossil resources onsite. If fossils are found, the report shall summarize the results of the inspection program, identify those fossils encountered, recovery and curation efforts, and the methods used in these efforts, as well as describe the fossils collected and their significance. A copy of the report shall be provided to the Kern County Planning and Natural Resources Department and to an appropriate repository such as the Natural History Museum of Los Angeles County.
- **MM 4.7-7:** If a paleontological resource is found, the project contractor shall cease ground-disturbing activities within 50 feet of the find. The qualified paleontologist shall evaluate the significance of the resources and recommend appropriate treatment measures. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Any fossils encountered and recovered shall be catalogued and donated to a public, non-profit institution with a research interest in the materials. Accompanying notes, maps, and photographs shall also be filed at the repository.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7, impacts would be less than significant.

## **Cumulative Setting, Impacts, and Mitigation Measures**

Impacts of the project would be considered cumulatively considerable if they would have the potential to combine with other past, present, or reasonably foreseeable projects to become significant. Cumulative projects listed in Chapter 3, *Project Description*, Table 3-3, *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 fault rupture. 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 loss injury or death to a less-than-significant level. Cumulative projects would also implement similar mitigation as required under the project which would require conducting a full geotechnical study to evaluate soil conditions and geologic hazards on the project site as well as retaining a California registered and licensed geotechnical engineer to design the project facilities. Therefore, with implementation of Mitigation Measures MM 4.7-1 and MM 4.7-2, the project, combined with past, present,

and other foreseeable development in the area, would not result in a cumulatively significant impact by directly or indirectly causing potential substantial adverse effects including fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Cumulative impacts would be less than significant.

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 an SWPPP) to mitigate erosion impacts. The proposed project's compliance with these codes, standards and permitting requirements are required by Mitigation Measures MM 4.7-3 and MM 4.7-4. Other cumulative scenario projects would be required to adhere to similar requirements, thereby minimizing cumulative scenario erosion impacts. Specifically, all planned projects in the vicinity of the project are subject to environmental review and would be required to conform to the Kern County General Plan and Building Code and would implement additional mitigation of seismic hazards to ensure soil stability, especially related to seismically induced erosion. With implementation of Mitigation Measures MM 4.7-3 and MM 4.7-4, the project would not contribute to any cumulative impacts related to substantial soil erosion or loss of topsoil. Cumulative impacts would be less than significant.

As previously discussed, risk of on-site or off-site landslides associated with development of the project are considered negligible. In addition, the potential for liquefaction and other geologic hazards related to liquefaction, including lateral spreading, are also considered low as historic groundwater levels in the area of the project site have been recorded at a depth greater than 100 feet bgs. With regard to subsidence, as the project would not obtain water from an underground aquifer, development of the project would not lead to subsidence on the project site or in the area. In addition, cumulative projects would be expected to use water supply canals and water pumping facilities in the project vicinity rather than pumping from underground aquifers. Furthermore, collapse would likely be negligible in the areas surrounding the project site. However, as with the project, cumulative projects would likely implement mitigation similar to Mitigation Measure MM 4.7-1, which would require a design level geotechnical investigation, which would include further pre-construction subsurface exploration to confirm the subsurface conditions. With implementation of Mitigation Measure MM 4.7-1, the project would not contribute to any cumulative impacts related to on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Cumulative impacts would be less than significant.

With regard to expansive soils, the project would implement Mitigation Measure MM 4.7-1, which requires that a geotechnical study to evaluate soil conditions and geologic hazards be performed by a qualified geotechnical engineer on the project site and would include evaluation for expansive soils and provide recommendations consistent with CBC requirements to reduce potential adverse effects from expansive soils. Cumulative projects would implement similar measures to address any potential for expansive soils. With implementation of Mitigation Measure MM 4.7-1, the project would not contribute to any cumulative impacts related to expansive soils. Cumulative impacts would be less than significant.

As discussed above, the project would use portable bathroom facilities to accommodate onsite workers and no wastewater disposal facilities including septic systems would be necessary. Therefore, impacts related to the onsite soils ability to support a septic system would have no impact. The project would not have any cumulative impacts related to soils stability to support a septic system.

The geographic scope for cumulative effects to paleontological resources includes the southern portion of the San Joaquin Valley that surrounds the area of the project site. Given similarities in geologic formations, this area is expected to contain similar types of paleontological resources. There is no temporal scope because direct impacts to paleontological resources are permanent. Cumulative impacts to paleontological resources in the study area could occur if other related projects, in conjunction with the proposed project, had or would have impacts on paleontological resources that, when considered together, would be significant. Development of the proposed project, in combination with other projects in the area, has the potential to contribute to a cumulatively significant paleontological resources impact due to the potential loss of paleontological resources unique to the region. However, mitigation measures are included in this EIR to reduce potentially significant project impacts to paleontological resources during construction of the proposed project. Implementation of Mitigation Measure MM 4.7-5 requires paleontology sensitivity training for construction workers and Mitigation Measure MM 4.7-6 requires appropriate monitoring of construction activities for potential paleontological resources that may be encountered. Although project construction has the potential to disturb paleontological resources, the implementation of Mitigation Measure MM 4.7-7 would ensure the appropriate protocol is followed with regard to identifying and handling remains. Implementation of these mitigation measures would reduce potential impacts to paleontological resources to a less-than-significant level. With implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7, the project would not result in significant impacts to paleontological resources. Given this minimal impact and the requirement for similar mitigation for other projects in the Southern San Joaquin Valley, project's incremental effect is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus cumulative impacts to paleontological resources would be less than significant.

#### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.7-1 through MM 4.7-7 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-1 through MM 4.7-7, cumulative impacts would be less than significant.

This page intentionally left blank

## 4.8.1 Introduction

This section of the EIR describes the affected environment and regulatory setting relating to greenhouse gases (GHGs) for the project. This section also describes the impacts associated with GHGs that would result from implementation of the project and, as necessary, mitigation measures that would reduce these impacts.

Information in this section is based primarily on the GHG section of the project's air quality technical report, *Air Quality and Greenhouse Gases Study for the Pastoria Solar Project, Kern County, California* (Air Quality and GHG Technical Report) (Jacobs, 2019), which was prepared by Jacobs Engineering Group, located in Appendix B of this EIR and incorporated by reference herein. The impact assessment for the project is also based upon a review of relevant literature and technical reports that include, but are not limited to, information and guidelines by the California Air Resources Board (CARB), U.S. Environmental Protection Agency (USEPA), and the applicable provisions of the California Environmental Quality Act (CEQA).

## 4.8.2 Environmental Setting

GHGs and climate change are a cumulative global issue. CARB and USEPA regulate GHG emissions within the state of California and the United States, respectively. While CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emissions reduction. CARB has divided California into regional air basins. The project site is located in the Kern County portion of the San Joaquin Valley Air Basin and is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVACPD).

## **Greenhouse Gases**

GHGs refer to gases that absorb and re-emit infrared radiation in the atmosphere. Many chemical compounds found in Earth's atmosphere act as GHGs, which allow sunlight to enter the atmosphere freely. When sunlight strikes Earth's surface, some of it is reflected back toward space as infrared radiation (heat). GHGs, however, absorb some of this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy sent from the sun to Earth's surface should be about the same as the amount of energy radiated back into space, leaving the temperature of Earth's surface roughly consistent. However, many gases exhibit the "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide, methane, and nitrous oxide) while others are exclusively human-made (e.g., gases used for aerosols). The principal GHGs are carbon dioxide ( $CO_2$ ), methane ( $CH_4$ ), nitrous oxide ( $N_2O$ ), sulfur hexafluoride ( $SF_6$ ), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs), are listed below (USEPA, 2017).

• **Carbon dioxide:** CO<sub>2</sub> 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<sub>2</sub> is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

- Methane: CH<sub>4</sub> is emitted during the production and transport of coal, natural gas, and oil. CH<sub>4</sub> emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.
- Nitrous oxide: N<sub>2</sub>O is emitted during agricultural and industrial activities and during combustion of fossil fuels and solid waste.
- **Fluorinated gases:** HFCs, PFCs, and SF<sub>6</sub> 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<sub>6</sub> is a colorless, odorless, nontoxic, nonflammable gas. SF<sub>6</sub> 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<sub>6</sub> 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<sub>6</sub> is a GHG commonly used in the utility industry as an insulating gas in circuit breakers and other electronic equipment. SF<sub>6</sub>, 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<sub>6</sub> could be reported as an emission of 22,800 MTCO<sub>2</sub>e (CARB, 2014a). Large emissions sources are reported in million MT (MMT) of CO<sub>2</sub>e (MMTCO<sub>2</sub>e).

## **Greenhouse Gas Emissions Inventories**

## California

California produced approximately 424.1 gross MMTCO<sub>2</sub>e in 2017, which is below the State's GHG reduction target of 1990 level GHG emissions (i.e., 431 MMTCO<sub>2</sub>e) by 2020. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2016, accounting for approximately 40 percent of total GHG emissions in the state. This sector was followed by the industrial sector at approximately 21 percent and the electric power sector (including both in-state and out-of-state sources) at approximately 15 percent (CARB, 2019a). CARB has projected that, unregulated, statewide GHG emissions for the year 2020 will be approximately 509 MMTCO<sub>2</sub>e (CARB 2014b). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions. California GHG emissions by economic sector from 2009 to 2017 are summarized in **Table 4.8-1**, *California Greenhouse Gas Emissions (MMTCO<sub>2</sub>e)*.

Emission Inventory Category	2009	2010	2011	2012	2013	2014	2015	2016	2017
Transportation	170.20	165.13	161.76	161.31	160.91	162.53	166.18	168.76	169.86
Electricity Generation (In State)	53.33	46.75	41.10	51.02	49.42	51.68	49.88	42.28	38.45
Electricity Generation (Imports)	48.04	43.59	46.87	44.50	39.98	36.79	33.93	26.32	23.94
Commercial	12.89	13.58	13.71	13.41	13.30	12.52	12.67	13.14	13.02
Industrial	87.90	91.50	90.17	91.08	93.69	94.02	91.48	89.49	89.40
Residential	29.32	30.06	30.51	28.21	29.02	23.75	24.17	25.27	26.00
Agriculture	32.85	33.68	34.34	35.46	33.99	35.06	33.75	33.51	32.42
High Global Warming Potential	12.29	13.52	14.53	15.51	16.75	17.73	18.60	19.26	19.99
Recycling and Waste	8.27	8.37	8.47	8.49	8.52	8.59	8.73	8.81	8.89
<b>Total Gross Emissions</b>	457.3	448.5	443.6	451.2	447.7	444.7	441.4	429.0	424.1
SOURCE: CARB, 2019b.									

 TABLE 4.8-1:
 CALIFORNIA GREENHOUSE GAS EMISSIONS (MMTCO2E)

#### **Kern County**

On May 3, 2011, the Kern County Board of Supervisors signed a memorandum of understanding with the SJVAPCD to develop a communitywide GHG emissions inventory for the County. The Kern County Communitywide GHG Emissions Inventory 2055 Baseline Year – 2020 Forecast was finalized in May 2012. The GHG emission inventories were estimated for nine primary sectors (electricity production and consumption, residential/commercial/industrial combustion, transportation, fossil fuels industry, industrial processes, waste management, agriculture, forestry and land use, and other sources). The 2005 base year and 2020 forecasted GHG emissions inventory is presented below in **Table 4.8-2**, Kern County Greenhouse Gas Emissions (MTCO<sub>2</sub>e). As shown therein, the 2005 base year GHG emissions inventory was estimated at 27.0 million MTCO<sub>2</sub>e and the 2020 forecasted GHG emissions inventory was estimated to be 27.3 million MTCO<sub>2</sub>e. Electricity production was estimated to generate 13,002,127 MTCO<sub>2</sub>e in 2005 and 18,455,958 MTCO<sub>2</sub>e in 2020. Electricity consumption during both the 2005 base year and 2020 forecasted year is provided in Table 4.8-2.

	2005 Base Year	Percent of 2005	2020 Forecasted	Percent of 2020
Sector	Emissions	Total	Emissions	Total
Electricity Consumption	6,039,114	22%	8,572,261	31%
Residential/Commercial/Industrial Combustion	1,281,498	5%	1,689,414	6%
Transportation	4,569,913	17%	4,823,756	18%
Fossil Fuels Industry	10,928,153	40%	7,002,009	26%
Industrial Processes	1,852,124	7%	2,348,754	9%
Waste Management	120,494	<1%	146,788	1%
Agriculture	2,024,470	7%	2,652,616	10%
Forestry and Land Use	11,028	<1%	14,669	<1%
Other Sources	218,823	1%	22,442	<1%
<b>Total Gross Emissions</b>	3,073,572		443.6	
SOURCE: SJVACPD, 2012.				

<b>TABLE 4.8-2:</b>	KERN COUNTY	<b>GREENHOUSE</b>	GAS EMISSIONS	(MTCO <sub>2</sub> E)
---------------------	-------------	-------------------	---------------	-----------------------

## **Climate Change**

GHGs are gases in the atmosphere that trap heat. The major concern with GHGs is that increases in GHG concentrations in the atmosphere are causing global climate change, which is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to GHGs from human activities, most in the world-wide scientific community agree that there is a direct link between increased emissions of GHGs and long-term global temperature increases (i.e., global warming).

According to CARB, the potential impacts in California due to global climate change may include: loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, larger forest fires, more drought years, increased erosion of California's coastlines and seawater intrusion into the Sacramento and San Joaquin Deltas and associated levee systems, and increased pest infestation (California Environmental Protection Agency [CalEPA], 2006). Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects (Intergovernmental Panel on Climate Change [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; and
- More intense precipitation events.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, ocean acidification (including coral bleaching), impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity. While the possible outcomes and the feedback mechanisms involved are not fully understood, the potential for substantial environmental, social, and economic consequences over the long-term may be great.

## 4.8.3 Regulatory Setting

## Federal

The principal air quality regulatory mechanism at the federal level is the federal Clean Air Act (CAA) and in particular, the 1990 amendments to the CAA and the National Ambient Air Quality Standards (NAAQS) that it establishes. The federal CAA does not specifically regulate GHG emissions; however, the U.S. Supreme Court has determined that GHGs are pollutants that can be regulated under the CAA. There are currently no federal regulations that set ambient air quality standards for GHGs.

USEPA regulations applicable to the project include:

#### **Federal Clean Air Act**

USEPA is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO<sub>2</sub> gases, agricultural practices, and implementation of technologies to achieve GHG reductions. USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR<sup>®</sup> labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the federal CAA. USEPA adopted a Final Endangerment Finding for the six defined GHGs ( $CO_2$ ,  $CH_4$ ,  $N_2O$ , HFCs, PFCs, and SF<sub>6</sub>). The Endangerment Finding was required before USEPA could regulate GHG emissions under Section 202(a)(1) of the CAA. USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not themselves impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

# Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks

On May 19, 2009, the federal government announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard jointly approved by the USEPA and the National Highway Traffic Safety Administration (NHTSA) applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy

(CAFE) standards and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO<sub>2</sub> per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO<sub>2</sub> 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 August 2018, the USEPA and NHTSA proposed the Safer Affordable Fuel-Efficient Vehicles Rule that would, if adopted, would maintain the CAFE and CO<sub>2</sub> standards for model year 2020 are 43.7 mpg and 204 g/mi for passenger cars and 31.3 mpg and 284 grams of CO<sub>2</sub> per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. The proposal, if adopted, would also exclude CO<sub>2</sub>-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 heavyduty trucks for model years 2014–2018 (76 FR 57106–57513). The standards for CO<sub>2</sub> 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<sub>2</sub> 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<sub>2</sub>e 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<sub>2</sub>e 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 MMT by 2020. The LCFS is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, and stimulate the production and use of alternative, low-carbon fuels in California. The LCFS is designed to provide a durable framework that establishes performance standards that fuel producers and importers must meet each year beginning in 2011.

#### Executive Orders S-3-05 and B-30-15

Executive Order S-3-05 sets target dates to reduce statewide GHG emissions to historical levels, as follows:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Executive Order B-30-15 sets a target date of 2030 to reduce GHG emissions to 40 percent below 1990 levels. Executive Orders S-3-05 and B-30-15 are only applicable to "State agencies with jurisdiction over sources of greenhouse gas emissions" (Order 4-29-2015 Section 2), and Kern County is not a State agency. Furthermore, there is currently no implementation strategy for these Executive Orders (i.e., a plan, which apportions GHG reductions by economic sector/activity/region, similar to the Assembly Bill [AB] 32 Climate Change Scoping Plan).

#### Assembly Bill 32 and Senate Bill 32

In 2006, Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006) focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub> and

represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions, and is required to adopt rules and regulations directing State actions that would reduce GHG emissions to 1990 levels by 2020.

In 2016, Senate Bill (SB) 32 and its companion bill, AB 197, amends HSC Division 25.5 and establishes a GHG reduction target of 40 percent below 1990 levels by 2030, and includes provisions to ensure the benefits of State climate policies reach into disadvantaged communities.

## Climate Change Scoping Plan

AB 32 required preparing a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (HSC Section 38561(h)). CARB developed a Climate Change Scoping Plan that contains strategies to achieve the 2020 emissions cap (CARB, 2008). In 2008, the initial Climate Change Scoping Plan contained a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives. In 2014, the First Update to the Scoping Plan upon the initial Climate Change Scoping Plan with new strategies and recommendations (CARB, 2014b). CARB revised the projected statewide 2020 emissions estimate of 509.4 MMTCO<sub>2</sub>e using the GWP values from the IPCC AR4 509.4 MMTCO<sub>2</sub>e (CARB 2014b). Therefore, the emission reductions necessary to achieve the 2020 emissions target of 431 MMTCO<sub>2</sub>e would be 78.4 MMTCO<sub>2</sub>e, or a reduction of GHG emissions by approximately 15.4 percent. In 2017, the 2017 Climate Change Scoping Plan established a 2030 GHG reduction target of 40 percent emissions reductions below 1990 levels (CARB, 2017).

## 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 (Kern COG), 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. Kern COG's reduction target for per capita vehicular emissions is 5 percent by 2020 and 10 percent by 2035 (CARB, 2010).

Kern COG adopted the 2018 Regional Transportation Plan (RTP), which includes a Sustainable Community Strategies (SCS) component in accordance with SB 375 (collectively referred to as the 2018 RTP/SCS). The 2018 RTP/SCS is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County.

#### Assembly Bill 1493

In a response to that transportation sector accounting for more than half of California's CO<sub>2</sub> emissions, AB 1493 was enacted by July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in 2004. When fully phased in, the near term (2009-2012) standards were projected to result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term standards will result in a reduction of about 30 percent.

### California Green Building Standards 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 2019 California Building Standards Code that also included the latest 2019 CALGreen Code, which became effective on January 1, 2020. The mandatory provisions of the code are anticipated to reduce GHG emissions by 3 MMTCO<sub>2</sub>e by 2020, reduce water use by 20 percent or more, and divert 50 percent of construction waste from landfills. Additionally, the California Building Code includes a requirement for a 20 percent reduction in indoor potable water usage. The 2013 California Energy Code (Title 24, Part 6), which is also part of the CALGreen Code (Title 24, Part 11, Chapter 5.2), became effective on July 1, 2014.

## **California Renewables Portfolio Standard**

First established in 2002 under SB 1078, California's Renewables Portfolio Standards (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 50 percent by 2030 (California Public Utilities 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 the standards set forth in SB 350 establishing that 44 percent of the total electricity sold to retail customers in California per year by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the State that eligible renewable energy resources and zero-carbon resources supply 100 percent of the retail sales of electricity to California. This bill requires that the achievement of 100 percent zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

#### Senate Bill 1368

SB 1368 requires the CPUC to establish a baseload generation standard for publicly owned or leased facilities which generate electricity at a GHG Emissions Performance Standard of 1,100 pounds of CO<sub>2</sub>e 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 Emissions Performance Standard.

### Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combined the control of smog- and soot- causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB, 2019c). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the 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 Cards 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 (CAPCOA, 2008). The strategies provided in that document are guidelines only and have not been adopted by any regulatory agency. The white paper serves as a resource to assist lead agencies in evaluating GHGs during review of environmental information documents. The methodologies used in this GHG analysis are consistent with the CAPCOA guidelines.

## Regional

### **2018** Regional Transportation Plan/Sustainable Communities Strategy

The Kern COG is the regional planning agency for Kern County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. Kern COG serves as the federally designated metropolitan planning organization for Kern County. With respect to air quality planning and other regional issues, Kern COG has prepared the 2018 Regional Transportation Plan (RTP) for the region (Kern COG, 2018). The 2018 RTP is a long-term (24-year) general plan for the region's transportation network, and encompasses projects for all types of travel, including aviation and freight movement. The plan assesses environmental impacts of proposed projects.

The Kern COG 2018 RTP includes an SCS component in accordance with SB 375, the Sustainable Communities and Climate Protection Act of 2008. The Kern COG board of directors adopted its first SCS on June 19, 2014, and made a determination that, if implemented, the SCS would achieve the per capita passenger vehicle GHG emissions targets established by the board of directors. The 2020 target is a 5 % per capita reduction and the 2035 target is a 10 percent per capita reduction from the 2005 base year.

Kern COG submitted its adopted SCS and GHG determination to CARB for review on June 4, 2015. On July 24, 2015, CARB accepted the determination that the Kern COG 2014 SCS, if implemented, would achieve the region's per capita GHG emission reduction targets for 2020 and 2035.

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/SCS 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/SCS:

- Describes sources of emissions in the Kern region, 2020 and 2035 emission reduction targets established by CARB for the San Joaquin Valley, and modeling techniques used to estimate and forecast emissions
- Identifies statewide strategies to reduce transportation-related emissions and their anticipated effect within the Kern region
- Identifies regional strategies that complement the SCS by reducing emissions in other sectors (e.g., energy consumption)
- Quantifies the effect of policies and programs in the RTP that reduce transportation-related emissions in the region and
- Compares the emissions reductions anticipated with implementation of the SCS with the regional targets (Kern COG, 2018).

## Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance,

and the Kern County Code of Building Regulations, which include policies, goals, and implementation measures related to greenhouse gas emissions. The policies and implementation measures in the Kern County General Plan related to greenhouse gas emissions that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2, *Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

#### Kern County General Plan

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

#### 1.10.2: Air Quality

#### Policies

- Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.
- Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, will ensure that:
  - (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted; and
  - (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.
- Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.
- Policy 21: The County shall support air districts efforts to reduce PM<sub>10</sub> and PM<sub>2.5</sub> emissions.
- Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, State, and local standards.

#### Implementation Measures

Measure F: All discretionary permits shall be referred to the appropriate air district for review and comment.

- Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:
  - 1. Minimizing idling time.
  - 2. Electrical overnight plug-ins.
- Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:
  - 1. Pave dirt roads within the development.
  - 2. Pave outside storage areas.
  - 3. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
  - 4. Use of alternative fuel fleet vehicles or hybrid vehicles.
  - 5. Use of emission control devices on diesel equipment.
  - 6. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.
  - 7. Provide bicycle lockers and shower facilities on site
  - 8. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).
  - 9. The use and development of park and ride facilities in outlying areas.
  - 10. Other strategies that may be recommended by the local Air Pollution Control Districts.
- Measure J: The County should include  $PM_{10}$  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.

In 2009, the Kern County Board of Supervisors approved the proposed list of Energy, Efficiency, and Conservation projects for which the County will request funding under the provisions of the American Recovery and Reinvestment Act of 2009. The Kern County Planning and Natural Resources Department has requested an allocation for the preparation of a Climate Change Action Plan (CCAP) for the County General Plan. California's Climate Scoping Plan calls for local governments to reduce GHG emissions through the adoption of local programs as an important strategy to reduce community scale GHG emissions. Project conformance with an adopted CCAP would ensure the goal of AB 32 can be attained with the project.

#### San Joaquin Valley Air Pollution Control District

The SJVAPCD has published *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects* (SJVAPCD Guidance). According to the SJVAPCD Guidance, the District takes a tiered approach for determining significance from GHG emissions as summarized below:

- Tier 1: Project Exemption from CEQA
- Tier 2: Project complies with an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions;
- Tier 3: The project achieves the 29 percent GHG Emissions Reduction Target by using approved Best Management Practices (BMPs).
- Tier 4: GHG emissions are quantified and the project implements best performance standards or achieves a GHG emissions reduction of 29 percent below Business-as-usual (BAU).

With respect to the Project, the Tier 1 approach cannot be used as the Project is not exempt from CEQA. With respect to Tier 2, neither the State, nor the County of Kern has a qualified (CEQA verified and adopted) Climate Action Plan or other plan for reducing GHG Emissions. Therefore, Tier 2 cannot be used for determining significance with GHG emissions. In light of *Center for Biological Diversity v. California Department of Fish and Wildlife* (CBD vs. CDFW62 Cal. 4th 204, 2015), the use of either Tier 3 or Tier 4 as significance thresholds also are not recommended for use in determining significance. Note that for Tier 4, BAU is a valid approach, however, the quantitative BAU reduction criteria in the SJVPACD Guidance lacks the necessary support as specified in CBD vs. CDFW62 Cal. 4th 204, 2015. As such, while the tiered approach for determining significance from GHG emissions as provided in the SJVAPCD Guidance are either not applicable or recommended, the SJVPACD Guidance is still a valid guidance document.

The SJVAPCD also has recommended Best Performance Standards (BPSs) for stationary sources and a list of GHG emissions reduction measures for development projects. However, due to the nature of project as a solar development, which does not include stationary sources nor is considered a development project, these BPSs or reduction measures are not applicable to the project.

## 4.8.4 Impacts and Mitigation Measures

## Methodology

The project's potential impacts to GHGs have been evaluated using a variety of resources, including the Air Quality and GHG Technical Report (Jacobs, 2019), which is provided in Appendix B of this EIR, and relevant literature including information and guidelines by CARB, USEPA, and the applicable provisions of CEQA. Additionally, the GHG savings from a 115 megawatt (MW) solar project were estimated. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described in the Thresholds of Significance section, below.

## **Construction and Decommissioning**

Short-term emissions are primarily from the construction phase of a project and are recognized to be short in duration and without lasting impacts on air quality. CalEEMod version 2016.3.2 was used to estimate emissions from construction worker vehicles, onsite construction equipment, and offsite vendor and haul truck trips. Construction of the project would result in GHG emissions primarily associated with the use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. Detailed construction assumptions are provided in the Air Quality and GHG Technical Report, included in Appendix B, of this EIR. For purposes of estimating project emissions, and based on information provided by the project proponent, it is assumed that construction of the project would commence in 2021 and would last approximately 12 to 14 months. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions, because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years, GHG emissions for construction of the project were calculated as follows:

- Off-Road Equipment: Off-road equipment would be required for several construction activities including grading and structure construction. Based on assumptions provided in Appendix B of this EIR, several construction phases would run concurrently. For this analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. Emission factors for off-road construction equipment (e.g., loaders, graders, bulldozers) were obtained from the CalEEMod (version 2016.3.2) User's Guide appendix, which provides values per unit of activity (in grams per horsepower-hour) by calendar year (CARB, 2017). GHGs were estimated by multiplying the CalEEMod emission factors by the equipment inventory and activity assumptions (e.g., horsepower, hours of use per day) provided by the project proponent.
- **On-Road Vehicles:** On-road vehicles (e.g., pickup trucks, flatbed trucks, and passenger vehicles) would be required for material deliveries to the project site, material and equipment hauling within the project site, onsite crew and material movement, and employee commuting. Emission factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's light-duty automobile/light-duty truck vehicle categories. As provided in Appendix B of this EIR, peak daily construction employees commute trips would be approximately 336 (generating a total of 672 one-way trips). In addition to the 336 maximum daily commute trips to the site there would be up to 9 vendor and haul truck trips per day at peak construction activity. The majority of the truck deliveries would be for the photovoltaic (PV) system installation, as well as any aggregate material that may be required for road base.
- Water Trucks: Water trucks would be required for several construction phases to provide fugitive dust control, with as many as three expected on a given day. Water consumption during construction is estimated to be approximately 58.6 acre-feet for dust suppression and earthwork over an approximately 12- to 14-month period. Water would be supplied from turnouts located at the project boundary.

The project has a tentative life of 35 years. At which time the operations can be renewed and onsite technology updated, or the project could be decommissioned. As decommissioning activities would be similar to the construction activities (using the same types of equipment and same general activities), the quantified emissions from construction are used as a surrogate for decommissioning activities. However, it would be anticipated that the decommissioning activities would be reduced from those estimated for the construction activities as the efficiencies of the construction equipment and on-road vehicles would be consistent with the future decommissioning year, which would require full compliance with stringent emissions standards for heavy-duty construction equipment resulting in anticipated substantial reductions in emissions from what is presented for construction activities.

## Operation

Long-term operational emissions associated with the project were also calculated using CalEEMod, version 2016.3.2. Long-term emissions would be predominately caused by mobile source emissions. Mobile sources for the project would primarily be motor vehicles (automobiles and light-duty trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The operations phase of the project was based on an assumption that that project would require eight full-time positions to maintain the infrastructure. However, as noted in the project description, the operation of the project would only require one to two employees on the project site periodically throughout out the year. However, the estimate of eight full-time positions used in the Air Quality and GHG Technical Report is conservative. These positions would generate 16 average daily trips. Supply, conveyance, treatment, and distribution of water and wastewater typically requires the use of electricity, which would result in associated indirect GHG emissions. However, water is available at turnouts that are within the project site. Emissions from trucks travelling to the project site to wash the solar panels are captured under mobile emissions. A small amount of electricity would be needed to operate the project (lights for the substation and battery area, and to run heating, ventilation, and air conditioning (HVAC) within the battery energy storage system (BESS) structure) and would be provided directly from the electricity generated from the project site, or from a commercial connection with Pacific Gas & Electric company. This use would amount to an insignificant use for equipment (computer consoles, etc.) needed to operate the facility from a remote location when needed. There would be no operations building requiring lighting for personnel and parking areas except lighting required for the emergency lighting system in the substation and BESS. Area source emissions are generated by maintenance equipment, landscape equipment, and use of products that contain solvents. Ongoing maintenance would include periodic panel replacement and cleaning of the solar panels to maintain performance and efficiency. However, these activities would generate minimal area source emissions during operation of the project.

## **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 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. CARB developed statewide interim thresholds of significance in 2008. For industrial projects, CARB proposed a quantitative threshold of 7,000 MTCO<sub>2</sub>e per year (CARB, 2008). 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. As discussed above, the SJVAPCD implemented a tiered approach to

determining significance with respect to GHG emissions; however, in light of *Center for Biological Diversity v. California Department of Fish and Wildlife* and SB 32, the quantitative threshold presented in their CCAP is no longer appropriate for determining significance of project related GHG emissions.

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 and routine operational and maintenance activities. 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 from vehicles used during routine operational activities. The estimated GHG emissions from construction and operational activities associated with the project are shown in **Table 4.8-3**, *Estimated Project Greenhouse Gas Emissions*.

Phase		GHG Emissions MTCO <sub>2</sub> e
Total Construction Emissions (12 months)		1,297
Annualized Construction Emissions <sup>a</sup>		43
Operation (assumes a 30-year project lifetime)		86
	Total Emissions	129
CARB Significance Threshold		7,000 MTCO <sub>2</sub> e
Exceed Threshold?		No

#### TABLE 4.8-3: ESTIMATED PROJECT GREENHOUSE GAS EMISSIONS

NOTES:

See Appendix B for GHG emissions calculations. Note that the numbers have been rounded to the nearest metric ton and, therefore, values may not add exactly.

<sup>a</sup> 30 year emissions are calculated by dividing total construction over 30 years and adding to the annual emissions operational emissions.

SOURCE: Jacobs, 2019; ESA, 2020.

While the project has a tentative life of 35 years, standard practice for many air districts in California is to amortize construction emissions over a 30-year project lifetime. As shown in Table 4.8-2, *Estimated Project Greenhouse Gas Emissions*, the total construction-related CO<sub>2</sub>e emissions annualized over a default project lifetime (30-years) methodologies is equivalent to approximately 43 MTCO<sub>2</sub>e. In addition, annual operational emissions would total 86 MTCO<sub>2</sub>e, which would result in a total project emission of 129 MTCO<sub>2</sub>e when considering both construction and operational emissions. This value is below the CARB's recommended threshold of 7,000 tons per year of MTCO<sub>2</sub>e, as recommended for industrial projects. Therefore, the project's contribution to climate change would not be cumulatively considerable and the project would not conflict with the State's goal to reduce GHG emissions to 1990 levels by 2020.

In addition, because the project is intended to generate electricity from a renewable source of energy, it would not result in substantial GHG emissions due to the burning of fossil fuels once in operation. Overall, operation of the project would create renewable energy over the maximum 35-year life of the project. This energy would displace the GHG emissions which would otherwise be produced by existing BAU power generation resources (including natural gas, coal, and renewable combustion resources). The project would generate a maximum of 115 MW of electricity at any one time, which would serve to displace GHG emissions and, thus, assisting in the attainment of the State's goal to reduce GHG emissions. Therefore, operation of the project would result in a substantial net reduction in GHG emissions, even when accounting for the very minimal operational GHG emissions of the project from a relatively small number of periodic maintenance and vehicle trips.

Given that the project would result in a net decrease of  $CO_2e$  emissions, impacts related to the generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment would be considered less than significant.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

# Impact 4.8-2: The project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas.

As discussed above, impacts were evaluated based on whether the project would be consistent with the State's applicable GHG reduction goals, plans, policies, and regulatory requirements as well as other federal, state, and local policies, as provided in the following analyses.

#### CARB Climate Change Scoping Plan

The project would comply with the strategies recommended by the State of California, the USEPA, and the Climate Change Scoping Plan, as shown in **Table 4.8-4**, *California Greenhouse Gas Emission Reduction Strategies*. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the 33 percent RPS by 2020 as well as the other measures listed in **Table 4.8-5**, *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.

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 1 to 4 percent biodiesel displacement of California diesel fuel.	Not applicable
Alternative Fuels – Ethanol: Increased use of ethanol fuel.	Not applicable
Achieve 50 percent Statewide Recycling Goal: Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. A diversion rate of 48 percent has been achieved on a Statewide basis. Therefore, a 2 percent additional reduction is needed.	The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended.
Zero Waste - High Recycling: Additional recycling beyond the State's 50 percent recycling goal.	The project would comply with the 1989 California Integrated Waste Management Act and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended.
Landfill Methane Capture: Install direct gas use or electricity projects at landfills to capture and use emitted methane.	Not applicable

#### TABLE 4.8-4: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

Strategy	Project Design/Mitigation to Comply with Strategy
Urban Forestry: A new Statewide goal of planting five million trees in urban areas by 2020 would be achieved through the expansion of local urban forestry programs.	Not applicable
Afforestation/Reforestation Projects: Reforestation projects focus on restoring native tree cover on lands that were previously forested and are now covered with other vegetative types.	Not applicable
Water Use Efficiency: 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.	Not applicable
Building Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).	The project would be consistent with State law.
Appliance Energy Efficiency Standards in Place and in Progress: Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).	The project would be consistent with State law.
Cement Manufacturing: Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry.	Not applicable
Smart Land Use and Intelligent Transportation Systems (ITS): Smart land use strategies encourage jobs/housing proximity, promote transit oriented development, and encourage high-density residential/commercial development along transit corridors. ITS is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.	Not applicable
Smart land use, demand management, ITS, and value pricing are critical elements for improving mobility and transportation efficiency. Specific strategies include: promoting jobs/housing proximity and transit-oriented development; encouraging high density residential/commercial development along transit/rail corridor; valuing and congestion pricing; implementing intelligent transportation systems, traveler information/traffic control, incident management; accelerating the development of broadband infrastructure; and comprehensive, integrated, multimodal/intermodal transportation planning.	Not applicable
Enteric Fermentation: Cattle emit methane from digestion processes. Changes in diet could result in a reduction in emissions.	Not applicable

#### TABLE 4.8-4: 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 115 MW with the ability to store up to 80 MW in a BESS. Therefore, the project would help support and not conflict with this strategy.
SOURCE: ESA, 2020.	

#### TABLE 4.8-4: CALIFORNIA GREENHOUSE GAS EMISSION REDUCTION STRATEGIES

 TABLE 4.8-5:
 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 <sub>6</sub> Leak Reduction Gas Insulated Switchgear
SOUR	CE: CARB, 2014c.	

Action T-1 relates to the Advanced Clean Cars program, in which the project's employees would purchase vehicles in compliance with the CARB vehicle standards that are in effect at the time of the vehicle purchase. In addition, as it related to Low Carbon Fuel Standards, under Action T-2, motor vehicles driven by the project's employees would use compliant fuels.

Action E-3 relates to renewable energy and the RPS, which is intended to increase California's renewable energy production to 20 percent by 2010, to 33 percent by 2020 and up to 100 percent by 2045, pursuant to SB 100. The CPUC estimates that the utilities are on track to meet the RPS requirement of 29 percent renewables by 2018 and are well-positioned to meet the 33 percent requirement by 2020 (California Public Utilities Commission, 2019). Utilities would also be required to meet the updated RPS goals of 60 percent renewable by 2030, and 100 percent renewable by 2045, pursuant to SB 100. A key prerequisite to reaching a target of 33 percent renewables would be to provide sufficient electric transmission lines to renewable resource zones and system changes to allow integration of large quantities of intermittent wind and solar generation. The project proposes a solar array with an electric power generating capacity of approximately 115 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 115 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 onsite 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<sub>6</sub>) 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<sub>6</sub>. Consistent with this action, the project would comply with any and all applicable regulatory requirements for any SF<sub>6</sub> containing switchgear.

#### Kern COG's 2018 RTP/SCS

The 2018 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. The 2018 RTP/SCS is not directly applicable to the project because the underlying purpose of the 2018 RTP/SCS 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/SCS. In addition, the project would not impact local transportation or land use during operation.

#### Other Federal/State/Local Policies

**Table 4.8-6**, *Project Consistency with an Applicable Plan, Policy, or Regulation for GHG Emissions*, evaluates project consistency with other applicable federal, State and local policies regarding GHG emissions. As shown in the table below, the project would fall below the annual emission triggers for compliance with federal regulations; therefore, federal regulations would not be applicable to the project. As a renewable energy project, the project would be exempt from State annual GHG reporting requirements and would be considered consistent with California's Emission Performance Standard and RPS requirements (described above under Section 4.8.3, *Regulatory Setting*, of this EIR).

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 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 below the 75,000 ton/year rule trigger.
State		
SB 1368. Emissions Performance Standard.	Consistent	The project, as a renewable energy generation facility, is determined by rule to comply with the GHG Emission Performance Standard requirements of SB 1368.
SB 351. 50% RPS Standard.	Indirectly consistent	This regulation is applicable to utilities, not generating facilities, but the energy from this project would help enable the utility buying the project's generation to comply with this legislation.
AB 32. Annual GHG Emissions Reporting	Not applicable	The project, as a solar energy generation project, is exempt from the mandatory GHG emission reporting requirements for electricity generating facilities as currently required by the CARB for compliance with the California Global Warming Solutions Act of 2006 (AB 32 Núñez, Statutes of 2006, Chapter 488, Health and Safety Code Sections 38500 et seq.).
Local		
Kern County General Plan – Air Quality Element Policies Goals and Implementation Measures	Consistent	Air Quality Mitigation Measures would ensure that the project is consistent with the Kern County General Plan Air Quality Element Policies, Goals, and Implementation Measures that will indirectly reduce GHG emissions by reducing fossil fuel combustion.
SOURCE: ESA, 2020.		

## TABLE 4.8-6: PROJECT CONSISTENCY WITH AN APPLICABLE PLAN, POLICY, OR REGULATION FOR GHG EMISSIONS

Overall, because the main objectives of the project are to construct and operate a solar energy generation facility with energy storage capabilities to help California advance its RPS and energy storage goals, the project would be compliant with the applicable recommended actions of the CARB Climate Change Scoping Plan as well as applicable federal, State and local policies. Specifically, the project would assist the State and regulated utility providers to generate a greater portion of energy from renewable sources consistent with the 2020 and 2030 RPS, including the targets established under SB 100. Therefore, this impact would be less than significant.

#### **Consideration of Mitigation Measures**

The Office of the California Attorney General maintains a website with a list of CEQA mitigation measures for global climate change impacts. The Attorney General has listed some examples of types of mitigation measures that local agencies may consider to offset or reduce global climate change impacts from a project. The Attorney General assures that the presented lists are examples and not intended to be exhaustive, but instead provide measures and policies that could be undertaken. Moreover, the measures cited may not be appropriate for every project, so the Attorney General suggests that the lead agency should use its own informed judgment in deciding which measures it would analyze, and which measures it would require, for a given project.

The Attorney General suggests measures that could be undertaken or funded by a diverse range of projects, related to energy efficiency; renewable energy; water conservation and efficiency; solid waste measures; land use measures; transportation and motor vehicles; and carbon offsets. However, most of the suggested measures would not be applicable to the project, since they are more appropriate and applicable measures to reduce long-term operational GHG emissions.

The impacts on global warming and climate change are indirect, climate change is a worldwide phenomenon, and project-level emissions cannot be correlated with specific impacts based on currently available science. However, based on the analysis above, the project would be consistent with California's strategies to reduce greenhouse gas emissions to the levels required by AB 32. As a renewable energy project, the project would contribute to achieving the mandated emission reduction targets established by AB 32. Additionally, the project would comply with any applicable forthcoming regulations or requirements adopted under AB 32 or imposed by the State or federal government. Therefore, considering the project's minimal annual emissions and anticipated reduction in overall GHG emissions, the project is not expected to significantly contribute to global warming or climate change.

Furthermore, as the project would have an electric power generating capacity of approximately 115 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. Impacts would be less than significant.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

## **Cumulative Setting, Impacts, and Mitigation Measures**

Emissions of GHGs and their contribution to global climate change are considered a cumulative impact by definition. Therefore, the geographic extent of the project's cumulative area of impact would be worldwide.

The adopted CEQA Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Although the Project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change. The State has mandated a goal of reducing Statewide emissions to 1990 levels by 2020 and reducing Statewide emissions to 40 percent below 1990 levels by 2030, even though Statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce Statewide GHG emissions. Currently, there are no applicable CARB, SJVAPCD, or Kern County significance thresholds or specific reduction targets, and no approved policy or guidance to assist in determining significance at the project or cumulative levels. However, as discussed above, while Kern County has not developed a quantified threshold of significance for GHG emissions, 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.

Total GHG emissions of 129 MTCO<sub>2</sub>e for the project are shown in Table 4.8-3, *Estimated Project Greenhouse Gas Emissions*. The main contribution of GHG emissions from the project would be from construction equipment usage during the construction and decommissioning phases and motor vehicles trips by employees and maintenance vehicles during project operations. Transportation sources account for 40 percent of California's total GHG emissions (CARB, 2019a). The project's emissions would, therefore, contribute to the increase in emissions in the transportation sector. Construction emissions would be finite and temporary and would cease at the end of construction activities. Although the project would result in a short-term contribution to cumulative GHG emissions in California, operation of the project would offset emissions from the electricity generation sector. Therefore, the total GHG construction emissions that would be associated with the project would likely be offset by less than one month of operations.

Overall, the project would not contribute to cumulative GHG emissions in California because operation of the project would provide electric power with negligible operational GHG emissions over the long term when compared to traditional fossil-fueled generation technologies. As analyzed above, 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, including the CARB Climate Change Scoping Plan. The nature of solar projects, including the project, is such that they would be consistent with the strategies of the Climate Change Scoping Plan. In order to meet the AB 32 GHG emissions reduction mandate, the Climate Change Scoping Plan relies on achievement of the RPS target of 33 percent of California's energy coming from renewable sources by 2020 and 50 percent by 2030. In order to meet the SB 32 GHG emissions reduction mandate, the 2017 Climate Change Scoping Plan relies on achievement of the RPS target of 50 percent of California's energy coming from renewable sources by 2030. As previously discussed, the RPS target was updated in September 2018 under SB 100 to 60 percent by 2030.

Based on the above, the project is presumed to have less-than-significant GHG impacts. Thus, the project would not have a cumulatively considerable impact on global climate change, and cumulative impacts would therefore be less than significant.

*CEQA Guidelines* Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may be to adopt ordinances or regulations rather than impose conditions on a project-by-project basis. Global climate change is this type of issue. GHG impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). Causes and effects are not just regional or Statewide, they are worldwide. Because the project's operational GHG emissions would be offset and no mitigation is required, any other feasible reductions would be accomplished through CARB regulations adopted pursuant to AB 32. Cumulative impacts of the project on global climate change would be less than significant.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Cumulative impacts would be less than significant.

## 4.9.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for hazards and hazardous materials in the study area. It also describes the project's potential impacts on residences and other sensitive receptors that could be exposed to these hazards (other than geologic hazards; see Section 4.7, *Geology and Soils*, of this EIR for discussion on geologic hazards) and presents mitigation measures where applicable. Information in this section is based primarily on a *Phase I Environmental Site Assessment and Limited Soil Sampling* (SCS, 2019), provided in Appendix J of this EIR, and publicly available databases including the Department of Toxic Substances Control's (DTSC) EnviroStor, State Water Resources Control Board's (SWRCB) GeoTracker, and the California Geologic Energy Management Division (CalGEM) [formerly the California Division of Oil, Gas, and Geothermal Resources (DOGGR)].

## 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 a solar facility and associated infrastructure with the capacity to generate up to 115 MW of electricity through solar power and up to 80 MW of battery storage on approximately 650 acres of privately owned land. The facility would include solar panels, gen-tie lines, electrical collection system, battery energy storage system (BESS), and an onsite substation. The energy would be ultimately transferred to the California ISO controlled grid via the Southern California Edison (SCE) Pastoria Substation.

## **Existing Setting**

The project site is relatively flat and characterized by undeveloped land used for grazing land. The area surrounding the project site is similarly undeveloped with a few industrial land uses. The nearest occupied residence is located approximately 2.5 miles from the project site. The closest school to the project site is the El Camino Real Elementary School, located approximately 16 miles north of the project site. The nearest public airport to the project site is the Bakersfield Municipal Airport, located approximately 24 miles north of the project site. Interstate 5 (I-5), the nearest highway, is located approximately 4.3 miles west of the project site at its closest point.

## **Historical Property Use**

The project site consists of undeveloped land with sparse vegetation that is currently used for grazing. The project area is sparsely populated and has a history of agricultural uses and oil exploration. As part of the Phase I Environmental Site Assessment, historical resources including aerial photographs, maps, reports, and interviews were reviewed to determine past land uses at the project site. The project site was historically used for dry farming, grazing, and oil exploration (SCS, 2019). The oil exploration activities occurred between 1937 and 1971 (SCS, 2019). According to records kept by CalGEM, six historical oil wells were identified on the project site (CalGEM, 2019). The wells were drilled for oil exploration activities and did not encounter gas or oil, and as a result they were drilled, plugged, and abandoned within the same year. These wells are not listed as active but rather as plugged. According to a review of the DTSC EnviroStor database, there are no hazardous release sites located within a mile of the project site (DTSC, 2019). The SWRCB GeoTracker database showed no listed release sites on the project site but there was one closed case near the project, Somer's Ranch, located approximately 0.3 miles east of the project site (SWRCB, 2019).

## **Hazardous Materials and Waste**

A hazardous material is any substance that, because of its quantity, concentration, or physical or chemical properties, may pose a hazard to human health and the environment. Under Title 22 of the California Code of Regulations (CCR), the term "hazardous substance" refers to both hazardous materials and hazardous wastes. Both of these are classified according to four properties: (1) toxicity; (2) ignitability; (3) corrosiveness; and (4) reactivity (22 CCR 11, Article 3).

A hazardous material is defined as a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (22 CCR 66260.10).

Various forms of hazardous materials can cause death; serious injury; long-lasting health effects; and damage to buildings, homes, and other property. Hazards to human health and the environment can occur during production, storage, transportation, use, or disposal of hazardous materials. As part of the site reconnaissance completed for the Phase I Environmental Site Assessment, no hazardous materials were observed on the project site (SCS, 2019)

Recognized Environmental Concern (REC) is one of the terms used to identify environmental liability within the context of a Phase I Environmental Site Assessment. The American Society for Testing and Materials (ASTM) defines a REC as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions." A Phase I Environmental Site Assessment was conducted for the project site and did not find evidence of a recognized environmental condition in connection with the site with the exception of historical oil exploration and agricultural activities (SCS Engineers, 2019). As a result, a limited Phase II Environmental Site Assessment was conducted to assess whether these activities had adversely affected surface soils (SCS, 2019).
A total of 16 soil samples composed of a composite of 4 discreet surface soil samples were analyzed by a certified laboratory for petroleum hydrocarbons, arsenic, polychlorinated biphenyls (PCBs) and organochlorine pesticides (OCPs). Note that only one sample was analyzed for PCBs due to the detection of total petroleum hydrocarbons in the oil range. The results were compared to regional screening levels developed by the Environmental Protection Agency (EPA) and the San Francisco Bay Regional Water Quality Control Board. The San Francisco Bay Regional Water Quality Control Board has no jurisdictional authority over the project site; however, their environmental screening levels are commonly used for reference. The detections of arsenic found present in the samples were determined to be within the range commonly associated with background concentrations for California soils (SCS, 2019). The detections of petroleum hydrocarbons were found at concentrations that were below environmental screening levels for commercial/industrial users. PCBs were not detected in the sample analyzed and metals were reported to be within typical background concentrations above the laboratory reporting limits (SCS, 2019).

### Photovoltaic Solar Panels and Cadmium Telluride

Photovoltaic (PV) solar panels that would be installed on the project site would be selected from those commercially available and thus are most likely made from polycrystalline silicon or thin film technology. Polycrystalline silicon solar panels may include small amounts of solid materials that are considered to be hazardous. Because such materials are in a solid and non-leachable state, broken polycrystalline silicon solar panels would not be a source of pollution to surface water, stormwater, or groundwater. Polycrystalline silicon panels removed from the site would be recycled or otherwise disposed at an appropriate waste disposal facility. In addition, the energy storage facility could include ion batteries which contain chemical contents that are considered hazardous, as well as lead acid, sodium sulfur, and sodium or nickel hydride.

The PV solar modules that would be installed on the project site may utilize Cadmium Telluride (CdTe) thin film technology. The semiconductor layer in the modules is in the environmentally stable form of a compound rather than the leachable form of a metal. The CdTe compound is encapsulated in the PV module with the PV module containing less than 0.1 percent Cd content by weight. Due to optimal optical properties, only a three-micron thin layer of CdTe is used to absorb incident sunlight, with Cd content per 8 square feet of PV module less than that of one C-size flashlight nickel-cadmium (NiCd) battery.

It has been demonstrated that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil. During the PV module manufacturing process, CdTe is bound under high temperature to a sheet of glass by vapor transport deposition, coated with an industrial laminate material, insulated with solar edge tape, and covered with a second sheet of glass. The module design results in the encapsulation of the semiconductor material between two sheets of glass thereby preventing the exposure of CdTe to the environment.

Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules. These studies have consistently concluded that during normal operations, CdTe PV modules do not present an environmental risk. CdTe releases are also unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled at the end of their approximately 30-year life. The PV module manufacturer provides CdTe module collection and recycling services. Since 2005, the end-of-life CdTe PV modules are currently characterized

as federal non-hazardous waste, and as a California-only hazardous waste. Solar equipment and infrastructure would be recycled as practical or disposed of in compliance with applicable laws. CdTe PV modules are an article of commerce and are not classified as a hazardous material for shipping purposes under either federal or State law.

# **Electromagnetic Fields**

Electromagnetic Fields (EMFs) are associated with electromagnetic radiation, which is energy in the form of photons. Radiation energy spreads as it travels and has many natural and human-made sources. The electromagnetic spectrum, the scientific name given to radiation energy, includes light, radio waves, and x-rays, among other energy forms. Electric and magnetic fields are common throughout nature and are produced by all living organisms. Concern over EMF exposure, however, generally pertains to human-made sources of electromagnetism and the degree to which they may have adverse biological effects or interfere with other electromagnetic systems.

Commonly known human-made sources of EMF are electrical systems, such as electronics and telecommunications, as well as electric motors and other electrically powered devices. Radiation from these sources is invisible, non-ionizing, and of low frequency. Generally, in most environments, the levels of such radiation added to natural background sources are low.

Electric voltage (electric field) and electric current (magnetic field) from transmission lines create EMFs. Power frequency EMF is a natural consequence of electrical circuits and can be either directly measured using the appropriate measuring instruments or calculated using appropriate information.

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.

The project would interconnect to the existing Pastoria Energy Facility switchyard through an approximately 0.5-mile-long gen-tie line, from which power would be conveyed 1.4 miles south through existing conductors to SCE's Pastoria substation.

In addition to transmission lines, the project proposes an onsite energy storage facility. The facility would consist of rechargeable battery packs, a Battery Management System (BMS), a Thermal Management System (TMS), inverters, step-up transformer, and required supervisory devices. The lithium ion energy

storage batteries would be housed in a structure or within conex boxes. The associated inverters, transformers, and switchgear would be located immediately adjacent to the structure on concrete pads. The energy storage would occur as direct current (DC) which produce static EMFs and has not been associated with adverse health effects (WHO, 2006).

# **Increase in Ambient Temperatures**

All exposed surfaces (e.g., houses, cars, rocks) absorb heat produced by the sun. A "heat island" effect is generated when cities cover miles of land with structures (e.g., concrete buildings and asphalt roads), which absorb and store significantly more heat during the day than undeveloped earth. Additionally, these cities are filled with energy-consuming devices (e.g., engines, appliances, and heating, air-conditioning, and ventilation [HVAC] systems) that generate waste heat.

Solar arrays consist of solar panels mounted on aluminum and steel support structures. The support structures have little or no exposure to sunlight. The project site would not be covered entirely with solar panels. The amount of the sun's heat absorbed by a solar panel is similar to the amount of the sun's heat absorbed by open land. However, solar panels store less heat than the earth because they consist of a thin, lightweight glass that is surrounded by airflow. Therefore, heat dissipates quickly from a solar panel compared with solid earth, which dissipates heat slowly. The project would have energy-consuming devices (e.g., inverters). Therefore, the project would generate marginal amounts of waste heat on the project site. However, there is nothing in the record to date that would indicate that the project would increase ambient air temperatures at or around the project site.

### **Increased Noise**

Noise from construction would be temporary over a period of up to 12 months for the project. The ambient noise regime in the project vicinity consists of undeveloped, industrial, and agricultural uses and is a relatively quiet noise environment. The nearest sensitive noise receptors to the project are isolated residential land uses, with the nearest located approximately 2.5 miles from the project site. 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 near the project site. However, these increases would be temporary and, as discussed further in Section 4.12, *Noise*, of this EIR, project construction would not cause a temporary or periodic increase in ambient noise levels at nearby sensitive receptors during the construction. Project construction noise levels at the nearest residences (located approximately 2.5 miles/13,200 feet away) would attenuate to well below the ambient noise levels.

# **Hazardous Materials Transportation**

I-5 is the nearest highway, located approximately 4.3 miles west of the project site. The transportation of hazardous materials within the State of California is subject to various federal, State, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway that is not designated for that purpose, unless the use of a highway is required to permit delivery or the loading of such materials (California Vehicle Code, Sections 31602(b) and 32104(a)). The California Highway Patrol (CHP) designates through routes to be used for the transportation of hazardous materials. Information on CHP requirements and regulatory authority is provided in Section 4.9.3, *Regulatory Setting*, below. According

to Section 2.5.4 of the Kern County General Plan Circulation Element, I-5 is designated as an adopted commercial hazardous materials shipping route.

# Airports

The nearest public airport to the project site is the Bakersfield Municipal Airport, located approximately 24 miles north of the project site. The closest private airport, Skydive San Joaquin Valley Airport, is located in Bakersfield approximately 12 miles to the northwest of the project site. The project site is not located within any Airport Influence Area, per the Kern County Airport Land Use Compatibility Plan (ALUCP).

# **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 moderate, high or very high fire risk, as determined by the Kern County General Plan and CAL FIRE (CAL FIRE, 2007a; CAL FIRE, 2007b).

# **Emergency Response**

Emergency response routes would be provided by the surrounding roads in the project vicinity. In particular, if the project site needed to be evacuated, Edmonston Pumping Plant Road, located to the south of the project site would be used to access I-5. The south-western quadrant of the project site is subject to Right of Way easement (license), recorded September 11, 1940 in Book 954 of Official Records page 354 Kern County Records, for the purpose of construction of a fire suppression road. Upon consultation with the Kern County Fire Department, there are no current or future plans to construct a fire suppression road within the project boundary.

# 4.9.3 Regulatory Setting

# Federal

# **U.S. Environmental Protection Agency**

The U.S. Environmental Protection Agency (USEPA) was established in 1970 to consolidate in one agency a variety of federal research, monitoring, standard-setting, and enforcement activities to ensure environmental protection. The EPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends. The USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress, is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for using permits and for monitoring and enforcing compliance. Where national standards

are not met, the USEPA can issue sanctions and take other steps to assist the states and tribes in reaching the desired levels of environmental quality.

# Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the USEPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (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 USEPA oversees and enforces the Oil Pollution Prevention regulation contained in 40 CFR 112, which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend, and implement spill prevention, control, and countermeasure (SPCC) plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total aboveground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "Navigable Waters" of the United States.

### **Other Regulations**

Other federal regulations overseen by the USEPA relevant to hazardous materials and environmental contamination include 40 CFR Parts 100 to 149 (Water Programs), 40 CFR Parts 239 to 259 (Solid Wastes), and 40 CFR Parts 260 to 279 (Hazardous Waste). These regulations designate hazardous substances under

the Federal Water Pollution Control Act; determine the reportable quantity for each substance that is designated as hazardous; and establish quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

### **Occupational Safety and Health Administration**

The Occupational Safety and Health Administration's (OSHA's) mission is to ensure the safety and health of U.S. workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. The OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR 1910, which include preparation of Health and Safety Plans (HASPs). HASPs identify potential hazards associated with a proposed land use and may provide appropriate mitigation measures as required. 29 CFR Section 1910.120(e) requires all employees working on site exposed to hazardous substances, health hazards, or safety hazards and their supervisors and management responsible for the site to receive training meeting the requirements of this paragraph before they are permitted to engage in hazardous waste operations that could expose them to hazardous substances, safety, or health hazards. These employees shall receive any necessary review training.

# State

# **California Department of Conservation, Geologic Energy Management Division**

CalGEM, formerly DOGGR, is the State agency responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. CalGEM's regulatory program promotes the sensitive development of oil, natural gas, and geothermal resources in California through sound engineering practices, pollution prevention, and the implementation of public safety programs. CalGEM requires any construction above or near plugged or abandoned oil and gas wells to be avoided, and remediation of wells to meet current CalGEM standards, including wells discovered during excavation or grading.

# California Public Utilities Commission General Order 95: Rules for Overhead Electric Line Construction

General Order 95 (GO 95) is the key standard governing the design, construction, operation, and maintenance of overhead electric lines within the State of California. It was adopted in 1941 and updated most recently in 2012. GO 95 includes safety standards for overhead electric lines, including minimum distances for conductor spacing, minimum conductor ground clearance, and standards for calculating maximum sag, electric line inspection requirements, and vegetation clearance requirements. The latter, governed by Rule 35, and inspection requirements, governed by Rule 31.2, are summarized below:

• **GO 95:** Rule 35, *Tree Trimming*, defines minimum vegetation clearances around power lines. Rule 35 guidelines require 10-foot radial clearances for any conductor of a line operating at 110,000 volts or more, but at less than 300,000 volts. This requirement would apply to the proposed 230 kV lines.

• **GO 95:** Rule 31.2, *Inspection of Lines*, requires that lines be inspected frequently and thoroughly for the purpose of ensuring that they are in good condition, and that lines temporarily out of service be inspected and maintained in such condition so as not to create a hazard.

## Power Line Hazard Reduction (PRC 4292)

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 nonexempt utility poles. The project structures would be exempt from the clearance requirements, with the exception of cable poles and dead-end structures.

The firebreak clearances required by 14 CCR 1254 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from the minimum clearance requirements by the provisions of 14 CCR 1255 or PRC 4296. The radius of the cylindroid is 10 feet, which is measured horizontally from the outer circumference of the specified pole or tower, with the height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space would be treated as follows:

- At ground level: Remove flammable materials, including ground litter, duff, and dead or desiccated vegetation that would propagate fire.
- From 0 to 8 feet above ground level: Remove flammable trash, debris, or other materials, grass, and herbaceous and brush vegetation. Remove all limbs and foliage of living trees up to a height of 8 feet.
- From 8 feet to the horizontal plane of highest point of the conductor attachment: Remove dead, diseased, or dying limbs and foliage from living sound trees and any dead, diseased, or dying trees in their entirety.

### Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused

materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste. A Hazardous Materials Business Plan must be submitted to the local Certified Unified Program Agency (the Kern County Public Health Services Department/Environmental Health Division) if the facility handles, uses or stores a hazardous material or mixture containing a hazardous material that has a quantity equal to or greater than 55 gallons of liquid, 500 pounds of a solid substance, or 200 cubic feet of compressed gas, a hazardous compressed gas in any amount, or hazardous waste in any amount. A Hazardous Materials Business Plan must include the following:

- Inventory of hazardous materials at a facility;
- Emergency response plans and procedures in the event of a reportable release or threatened release of a hazardous material; and
- Training for all new employees and annual training for all employees in safety procedures in the event of a release or threatened release of a hazardous material (Cal OES, 2014).

### Hazardous Waste Control Act

The Hazardous Waste Control Act created the State Hazardous Waste Management Program, which is similar to but more stringent than the federal RCRA program. The act is implemented by regulations contained in Title 26 CCR, which describes the following required aspects for the proper management of hazardous waste:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with DTSC.

# Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Senate Bill 1082 (1993) created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), which requires the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are as follows:

- Hazardous Waste Generator and Onsite Hazardous Waste Treatment Programs (i.e., Tiered Permitting);
- Aboveground Petroleum Storage Tank Program;

- Hazardous Materials Release Response Plans and Inventory Program (i.e., Hazardous Materials Disclosure or "Community-Right-To-Know");
- California Accidental Release Prevention Program (Cal ARP);
- Underground Storage Tank (UST) Program; and
- Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses in complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA. The CUPA in Kern County is the Environmental Health Division of the Kern County Public Health Services Department.

### **California Code of Regulations – Hazardous Substances**

Under CCR Title 22, 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).

CCR Title 8 (Chapter 3.2, Article 5, Section 339) includes a list of identified hazardous substances. Hazardous materials in various forms can cause death; serious injury; long-lasting health effects; and damage to buildings, homes, and other property (DHS, 2016).

### **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), SWRCB, Regional Water Quality Control Board (RWQCB), California Department of Resources Recycling and Recovery (CalRecycle), DTSC, Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal/EPA "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Their mission is to restore, protect, and enhance the environment and to ensure public health, environmental quality, and economic vitality.

### **Department of Toxic Substances and Control**

DTSC, a department of Cal/EPA, is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. DTSC regulates hazardous waste primarily under the authority of the Federal RCRA and the

California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

USC 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks or a discharge of hazardous wastes or materials into the water or groundwater and lists from local regulatory agencies of sites with a known migration of hazardous waste/material.

## **California Office of Emergency Services**

In order to protect public health and safety, and the environment, the California Office of Emergency Services (OES) is responsible for establishing and managing statewide standards for business and area plans relating to the handling and release, or threatened release, of hazardous materials. The OES requires that basic information on hazardous materials handled, used, stored, or disposed of (including location, type, quantity, and health risks) be available to firefighters, public safety officers, and regulatory agencies. Typically, this information should be included in business plans in order to prevent or mitigate damage to the health and safety of persons and the environment from the release or threatened release of these materials into the workplace and environment. These regulations are covered under Chapter 6.95 of the California Health and Safety Code, Article 1—Hazardous Materials Release Response and Inventory Program (Sections 25500 to 25520) and Article 2—Hazardous Materials Management (Sections 25531 to 25543.3).

Title 19 CCR, Public Safety, Division 2 (Office of Emergency Services), Chapter 4 (Hazardous Material Release Reporting, Inventory, and Response Plans), Article 4 (Minimum Standards for Business Plans) establishes minimum statewide standards for hazardous materials business plans. These plans must include the following: (1) a hazardous material inventory in accordance with Sections 2729.2 to 2729.7, (2) emergency response plans and procedures in accordance with Section 2731, and (3) training program information in accordance with Section 2732. Business plans contain basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the State. Each business will prepare a hazardous materials business plan if that business uses, handles, or stores a hazardous material or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance;
- 55 gallons of a liquid;
- 200 cubic feet of compressed gas;
- A hazardous compressed gas in any amount; or
- Hazardous waste in any quantity.

### California Occupational Safety and Health Administration

California Occupational safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 337–340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

## **California Highway Patrol**

A valid Hazardous Materials Transportation License, issued by the California Highway Patrol (CHP), is required by the laws and regulations of State of California Vehicle Code Section 3200.5 for transportation of either:

- Hazardous materials shipments for which the display of placards is required by State regulations; or
- Hazardous materials shipments of more than 500 pounds, which would require placards if shipping greater amounts in the same manner.

Additional requirements on the transportation of explosives, inhalation hazards, and radioactive materials are enforced by the CHP under the authority of the State Vehicle Code. Transportation of explosives generally requires consistency with additional rules and regulations for routing, safe stopping distances, and inspection stops (14 CCR 6 [1] [1150–1152.10]). Inhalation hazards face similar, more restrictive rules and regulations (13 CCR 6 [2.5] [1157–1157.8]). Transportation of radioactive materials is restricted to specific safe routes.

# Local

Construction and operation of the solar facility would be subject to policies and regulations contained within the general and specific plans, including the Kern County General Plan, Kern County Zoning Ordinance, and the Kern County Code of Building Regulations, which include policies pertaining to the avoidance of hazards and adverse effects related to hazardous materials. The policies, goals, and implementation measures in the Kern County General Plan for hazards and hazardous materials 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 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.

#### 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 2.6–2.9 and Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in an unmitigated significant impact.

Policy 3: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.

#### **1.4: Public Facilities and Services**

#### Policy

Policy 6: The County will ensure adequate fire protection to all Kern County residents.

#### **Chapter 2: Circulation Element**

#### 2.5.4: Transportation of Hazardous Materials

Transportation-related accidents and spills of hazardous materials pose a serious threat to the traveling public and nearby sensitive land uses. Transportation of hazardous materials poses a short-term threat to public health.

#### Goal

Goal 1:	Reduce risk to public health from transportation of hazardous materials.
Policies	
Policy 1:	The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.
Policy 2:	Kern County and affected cities should reduce use of County-maintained roads and city- maintained streets for transportation of hazardous materials.

#### Implementation Measure

Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.

#### Chapter 4: Safety Element

# 4.2: General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint

#### Implementation Measure

Measure F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by the Federal Emergency Management Agency (FEMA), shall be used as a

source document for preparation of environmental documents pursuant to the California Environmental Quality Act (CEQA), evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.

#### 4.9: Hazardous Materials

#### Implementation Measure

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

#### 4.10: Abandoned Open Shafts and Wells

In some areas of the County, there exist abandoned mine shafts that, if not secured, contribute to the injury of or fatality to unsuspecting members of the public. Many such shafts are within lands owned and controlled by various agencies of the Federal government.

#### Policies

- Policy 1: The County should protect residents from the hazards of improperly abandoned mine shafts.
- Policy 2: The County should protect residents from the hazards associated with development in areas where wells have been drilled and abandoned for exploration and/or production of oil and natural gas.

#### Implementation Measure

Measure B: Support the construction site review program of the Department of Oil, Gas and Geothermal Resources that ensures that wells are precisely located, properly plugged and abandoned, and tested for leakage prior to development of the area.

#### Chapter 5: Energy Element

#### 5.4.5: Solar Energy Development

#### Policy

Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

### Kern County Multi-Hazard Mitigation Plan

The latest Kern County Multi-Hazard Mitigation Plan was developed in 2012. 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 2016 California Fire Code and the 2015 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees.

### Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March of 2018 is the most current document that assesses the wildland fire situation throughout the SRA within the County. Similar to other plans, this document includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire problem. The plan provides for a comprehensive analysis of fire hazards, assets at risk, and level of services to systematically assess the existing levels of wildland protection services and identifies high-risk and high-value areas that are potential locations for costly and damaging wildfires. Additionally, the plan provides an annual report of unit accomplishments, which, in 2017, included completion of a number of fuel reduction projects, hosted three wildfire safety expos in battalions 1,5, and 7, and the award of three SRA fuel reduction grants for a total of \$500,000. The plan gives an overview of KCFD Battalions and ranks these areas in terms of priority needs as well as identifies the areas of SRA. According to the plan, 69 percent of Kern County areas are within a SRA. The County is broken up into six different fuel management areas, Tehachapi, Western Kern, Northern Kern, Mount Pinos Communities, Kern River Valley, and Valley. The project site is located within Battalion 5 (Mount Pinos Communities) which is within a Non-Wildland/Non-Urban 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 project would mount systems for the modules on steel support posts that would be pile driven into the ground and would therefore comply with the ground mounted requirements of this fire prevention standard. Ground mounted solar panel requirements of this standard include water supply, clearance and combustibles, stationary storage battery/energy storage systems, clean agent system permits, fire extinguisher placement, and emergency vehicle access (KCFD, 2019).

# Kern County Department of Environmental Health Services Department

The Kern County Environmental Health Services Department is the CUPA for the project area, which provides site inspections of hazardous materials programs (above ground storage tanks, USTs, hazardous waste treatment, hazardous waste generators, hazardous materials management and response plans, and the California Fire Code). This Department also provides emergency response to hazardous materials events, performing health and environmental risk assessment and substance identification.

# Kern County and Incorporated Cities Hazardous Waste Management Plan

In response to the growing public concern regarding hazardous waste management, State Assembly Bill 2948 enacted legislation authorizing local governments to develop comprehensive hazardous waste management plans. The intent of each plan is to ensure that adequate treatment and disposal capacity is available to manage the hazardous wastes generated within the local government's jurisdiction.

The Kern County and Incorporated Cities Hazardous Waste Management Plan (Hazardous Waste Plan) was first adopted by Kern County and each incorporated city before September 1988 and was subsequently approved by the State Department of Health Services. The Hazardous Waste Plan was updated and incorporated by reference into the Kern County General Plan in 2004 as permitted by Health and Safety Code Section 25135.7(b) and, thus, must be consistent with all other aspects of the Kern County General Plan.

The Hazardous Waste Plan provides policy direction and action programs to address current and future hazardous waste management issues that require local responsibility and involvement in Kern County. In addition, the Hazardous Waste Plan discusses hazardous waste issues and analyzes current and future waste generation in the incorporated Cities, County, and State and federal lands. The purpose of the Hazardous Waste Plan is to coordinate local implementation of a regional action to affect comprehensive hazardous waste management throughout Kern County. The action program focuses on development of programs to equitably site needed hazardous waste management facilities; to promote onsite source reduction, treatment, and recycling; and to provide for the collection and treatment of hazardous waste from small-quantity generators. An important component of the Hazardous Waste Plan is the monitoring of hazardous waste management facilities to ensure compliance with federal and State hazardous waste regulations.

# 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) project components that could result in environmental contamination.

The project's potential impacts to hazards and hazardous materials have been evaluated using a variety of resources, including the Phase I Environmental Site Assessment and Limited Soil Sampling and public records and databases maintained by DTSC, SWRCB, and CalGEM. The project was evaluated for adequate accessibility for emergency responders based on the project location, construction plans, and site plans, and any potential alterations to existing evacuation routes and plans. The methodology for determining impacts relating to wildland fires focuses on the fire severity at the project site and the surrounding areas based on existing State and local maps and land characteristics. Using the aforementioned resources and professional judgment, impacts were analyzed according to CEQA significance criteria described below.

# **Thresholds of Significance**

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

A project would have a significant impact related to hazards and hazardous materials if it would:

- a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4 mile of an existing or proposed school;
- d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- e. For a project located within the adopted Kern County Airport Land Use Compatibility Plan, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
- f. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan;
- g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires;

- h. Generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste. Specifically, would the project exceed the following qualitative threshold:
  - The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:
    - i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and
    - ii. Are associated with design, layout, and management of project operations; and
    - iii. Disseminate widely from the property; and
    - iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.

# **Project Impacts**

# Impact 4.9-1: The project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

### Construction

Construction of the 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. During construction of the project, material safety data sheets for all applicable materials present at the site would be made readily available to onsite personnel in accordance with required best management practices (BMPs) as part of a Stormwater Pollution Prevention Plan (see Section 4.10, *Hydrology and Water Quality*). Workers would be trained to properly identify and handle all hazardous materials. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment and/or disposal facility. All hazardous waste shipped offsite for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location.

During construction of the facilities, non-hazardous construction debris would be generated and disposed of in local landfills. Sanitary waste would be managed using portable toilets located at a reasonably accessible onsite location. Compliance with applicable regulations would ensure that construction of the project would not create a significant hazard to the public or the environment through the transport and disposal of hazardous materials. As described in Section 4.17, *Utilities and Service 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 through coordination with the onsite contractors, local waste haulers, and/or other

facilities that recycle construction/demolition wastes. Implementation of Mitigation Measure MM 4.17-1 would reduce impacts to a less than significant level.

Hazardous materials such as petroleum fuels and lubricants used on field equipment would be subject to the Material Disposal and Solid Waste Management Plan, and SPCC plan and other measures to limit releases of hazardous materials and wastes (see further discussion of BMP requirements in Section 4.10, *Hydrology and Water Quality*, of this EIR). Recyclable materials including wood, shipping materials, and metals would be separated when possible for recycling. Liquids and oils in the transformer and other equipment would be used in accordance with applicable regulations. The disposal of all oils, lubricants, and spent filters would be performed in accordance with all applicable regulations including the requirements of licensed receiving facilities. Overall, the relatively limited use and small quantities of hazardous materials, and subsequently transport and disposal of such materials, during construction would be controlled through compliance with applicable regulations including the Kern County and Incorporated Cities Hazardous Waste Management Plan. As such, impacts during construction would be less than significant.

The Phase I Environmental Site Assessment prepared for the project site identified two historical recognized conditions, agricultural use and oil exploration, as having a potential to have adversely affected surface soils at the site. Therefore, a limited surface soil sampling investigation was conducted to determine the presence of petroleum hydrocarbons, arsenic, PCBs and OCPs. No OCPs were detected above laboratory reporting limits and arsenic was detected but at levels consistent with typical background concentrations (SCS, 2019). Petroleum hydrocarbons were also detected in one composite sample but at a concentration below environmental screening levels for commercial/industrial land uses. One sample was also analyzed for PCBs and metals and no PCBs were detected while the metals were found to be below background concentration ranges (SCS, 2019). The report concluded that no further sampling was necessary (SCS, 2019). Therefore, despite the historical recognized conditions at the project site, the limited soil sampling program indicates that the surface soils have not been adversely affected.

### Operation

Operations and maintenance activities associated with PV solar facilities with integrated battery storage systems are relatively minor when compared to conventional power plants or even other industrial land uses and would require very limited use of hazardous materials and generation of hazardous waste. Any hazardous materials that would be used would be stored onsite and in designated areas in accordance with a Hazardous Materials Business Plan (see below). The project site would be secured and enclosed by a fence surrounding each site to prevent public access to hazardous materials and the PV panels. The interconnection (power line) portions of the project would largely use previously approved gen-tie lines and these connections would not require use of hazardous materials during operation.

Primary operations and maintenance activities that would occur on the project site during operation would consist of panel washing but would also include without limitation: liaison and remote monitoring; administration and reporting; semi-annual and annual services; remote operations of inverters; site security and management; additional communication protocol; and repair and maintenance of solar facilities and other project facilities. No heavy equipment would be necessary during normal project operation. Vehicles used during operations and maintenance 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 workers or the public.

The PV modules that would be installed on the project site may utilize CdTe thin film technology. As described above in the Environmental Setting, 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, 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 potential 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.

Dust palliatives and herbicides, if used during operations to control vegetation, may be transported to the project site. These materials would be stored in appropriate containers in accordance with the hazardous materials business plan required by Mitigation Measure MM 4.9-1.

Project operations could require the use of transformer oil at the project substations and the energy storage facility could contain battery acids, as well as lithium ion, lead acid, sodium sulfur, and sodium or nickel hydride. All transformers would be equipped with spill containment areas and BESS 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. There are no designated routes for the transport of hazardous materials located on or immediately adjacent to the project site; the closest route is I-5. Compliance with applicable regulations would ensure that operation of the project would not create a significant hazard to the public or the environment through the use, storage, and transport of hazardous materials and impacts would be less than significant. Implementation of Mitigation Measures MM 4.17-1 and MM 4.9-1, would further reduce impacts related to hazards.

Further, implementation of the project would not result in the significant risk of EMFs associated with overhead power lines, as each facility would interconnect into an existing substation. The project intends to use existing interconnection facilities associated with other generating and transmission projects to minimize potential environmental impacts. In addition, the project would not construct sensitive uses under the existing lines but would adhere to applicable CPUC requirements on location of any gen-tie lines or gen-tie connections. As the State has not adopted any specific limits or regulations regarding EMF levels from electric power facilities, impacts in this regard would be less than significant.

### Decommissioning and Disposal

During the decommissioning and disposal process, it is anticipated that all project structures would be fully removed from the ground. Above-ground equipment that would be removed would include electrical wiring, equipment on the inverter pads, and the interconnection transformer pad and associated equipment. Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment offsite. Removal of the PV modules would include removal of the racks on which the solar panels are attached, and their placement in secure transport crates and a trailer for storage, for ultimate transportation to another facility.

Once the PV modules have been removed, the racks would be disassembled, and the structures supporting the racks would be removed. All other associated site infrastructure would be removed, including fences, concrete pads that may support the inverters, transformers and related equipment, and underground conduit/electrical wiring. The fence and gate would be removed, and all materials would be recycled to the extent feasible. The area would be thoroughly cleaned and all debris removed. As discussed above, most panel materials would be recycled, with minimal disposal to occur in landfills in compliance with all applicable laws. The PV module manufacturer would likely provide CdTe module collection and recycling services, following -applicable regulation. 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, 2003). These studies have consistently concluded that use of CdTe PV modules do not present an environmental risk.

As described in Section 4.17, *Utilities and Service Systems*, Mitigation Measure MM 4.17-1 requires that an onsite recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The onsite recycling coordinator shall also be responsible for ensuring that wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal. The name and phone number of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits. Implementation of Mitigation Measure MM 4.17-1, would further reduce impacts related to hazards to a less-than-significant level.

#### **Mitigation Measures**

Implementation of Mitigation Measure MM 4.17-1 would be required (see Section 4.17, *Utilities and 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, as applicable, pursuant to Article 1 and Article 2 of California Health and Safety Code 6.95 and in accordance with Kern County Ordinance Code 8.04.030, by submitting all the required information to the California Environmental Reporting System at http://cers.calepa.ca.gov/ for review and acceptance by the Kern County Environmental Health Services Department/Hazardous Materials Section. The Hazardous Materials Business Plan shall:
  - Delineate hazardous material and hazardous waste storage areas
  - Describe proper handling, storage, transport, and disposal techniques
  - Describe methods to be used to avoid spills and minimize impacts in the event of a spill
  - Describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction and operation
  - Establish public and agency notification procedures for spills and other emergencies including fires
  - Include procedures to avoid or minimize dust from existing residual pesticides and herbicides that may be present on the site

The project proponent shall ensure that all contractors working on the project are familiar with the facility's Hazardous Materials Business Plan as well as ensure that one copy is available at the project site at all times. In addition, a copy of the accepted Hazardous Materials Business Plan from California Environmental Reporting System 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

Construction activities required for the project would involve trenching, excavation, grading, and other ground-disturbing activities. Construction activities would temporarily require use of equipment, such as trucks, excavators, and other powered equipment, and would use potentially hazardous materials such as fuels (gasoline and diesel) and lubricants (oils and greases). In addition, construction may use hazardous materials such as glues, solvents, paints, thinners, or other chemicals. Such materials would be used in

quantities typically associated with construction of PV solar facilities and would be transported, handled, stored, and disposed of in accordance with applicable laws and regulations and manufacturers' instructions. An accidental release of hazardous materials could result in a significant hazard to the public or the environment. Implementation of Mitigation Measure MM 4.9-1 and the Hazardous Materials Business Plan, 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.

According to CalGEM, the project site is not located within a known active oil production field, but does include six plugged exploratory oil wells located within the project boundary (CalGEM, 2019). Based on existing records, the wells did not produce oil or gas and were immediately plugged. During construction around the plugged wells, construction personnel could encounter unknown oil and/or gas, resulting in a potentially significant impact. Implementation of Mitigation Measure MM 4.9-2 would be required to ensure that these wells were plugged sufficiently to prevent any leakage of harmful gases.

Despite the relatively open spaces surrounding the project site, nearby sensitive receptors could be exposed to pollutant emissions during construction of the project, resulting in a potentially significant impact. An adverse risk related to exposure to hazardous materials could result from the installation and use of transformers, grading of the site, the application of herbicides, or other construction or operation processes if hazardous material is not used appropriately during construction. Implementation of Mitigation Measure MM 4.9-3, which regulates the use of herbicides as described below, Mitigation Measure 4.9-2, which requires testing for leaks and remediation, as necessary, as well as Mitigation Measures MM 4.9-1 and MM 4.17-1, would reduce impacts related to sensitive receptors to a less-than-significant level.

### Operation

The PV modules and inverters would produce no hazardous waste during operation. Each enclosed transformer at the substation would include mineral oil, but secondary containment would be provided in accordance with applicable federal, State, and local laws and regulations. The mineral oil contained in each transformer does not normally require replacement, and mineral oil disposal would be in accordance with all applicable federal, State, and local laws and regulations.

As stated in the environmental setting above, it has been demonstrated that standard operation of polycrystalline silicon PV systems does not result in pollution emissions to air, water, or soil. Polycrystalline silicon panels removed from the site would be recycled or otherwise disposed at an appropriate waste disposal facility. Hazardous materials are unlikely to occur during accidental breakage of the polycrystalline silicon solar panels. Similarly, fire damage would not result in the release of hazardous materials. The polycrystalline silicon PV panel does not pose a threat to residences in the vicinity of the site for these reasons.

CdTe or other materials releases are unlikely to occur from accidental breakage of or fires involving the PV modules. CdTe is a highly stable semiconductor compound due to strong chemical bonding that translates to extremely low solubility in water, low vapor pressure, and a melting point greater than 1,000 degrees Celsius (°C). Potential impacts to soil, air, and groundwater quality from broken CdTe PV modules are highly unlikely to pose a potential health risk as they are below both human health screening levels and background levels (Sinha et al., 2012).

Potential CdTe emissions from fire are unlikely to occur at the project site because of the lack of fuel to support a sustained wildfire. Grass fires are the most likely fire exposure scenario for ground-mounted PV systems, and these fires tend to be short-lived due to the thinness of grass fuels. As a result, these fires are unlikely to expose PV modules to prolonged fire conditions or to temperatures high enough to volatilize CdTe, which has a melting point of 1,041°C. Moreover, even if a desert wildfire could reach that temperature, the actual CdTe emissions from a PV module would be insignificant (~0.04 percent) due to encapsulation in the molten glass matrix (Fthenakis et al., 2003).

Potential CdTe emissions from broken PV modules exposed to precipitation are also unlikely. Based on warranty return data, the breakage rate of CdTe PV modules is low, 1 percent over 25 years, which translates to an average of 0.04 percent per year. This breakage rate is an overestimate because over one-third of PV module breakage occurs during shipping and installation. Modules that break during shipping and installation are removed from the construction site and returned to a manufacturing facility for recycling. Even if the CdTe semiconductor layer becomes exposed to the environment, it strongly resists being released from the PV module into the environment, and CdTe has an extremely low solubility in water.

The CdTe PV modules do not pose a threat to nearby residences. The use of CdTe PV modules at the project site would not result in human or aquatic exposure of cadmium. A recent research article, Fate and Transport Evaluation of Potential Leaching Risks from Cadmium Telluride Photovoltaics (Sinha et al, 2012), further substantiates that during operation, CdTe PV modules do not pose a threat to human health or the environment due to its construction. The study evaluates the worst-case scenario to estimate potential exposures to CdTe compounds in soil, air or groundwater. The results show that exposure point concentrations in soil, air, and groundwater are one to six orders of magnitude below human health screening levels and below background levels, indicating that it is highly unlikely that exposures would pose potential health risks to onsite workers or offsite residents.

In addition, the hazardous materials that would be present in the energy storage facility would be contained within specifications that follow applicable federal State and local requirements. OSHA requirements call for the inclusion of appropriate ventilation, acid resistant materials, and presence of spill protection supplies.

Removal and/or maintenance of vegetation may require herbicide use during both construction and operation. If not handled properly, use of these products could create a hazard to the public (construction workers, maintenance employees, and nearby residences), resulting in a potentially significant impact. Mitigation Measure MM 4.9-3 would reduce impacts related to use of herbicides to a less-than-significant level.

As noted above, the project would not involve the routine transport, use, or disposal of substantive quantities of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. The closest designated route for the transport of hazardous materials is I-5, which is located approximately 4.3 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 Measures MM 4.9-1, MM 4.9-3, and MM 4.17-1 would minimize or reduce potential impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials, to a less-than-significant level.

#### Decommissioning and Disposal

The decommissioning and disposal process is described under Impact 4.9-1, above. Most panel materials would be recycled to the extent feasible, with minimal disposal to occur in landfills in compliance with all applicable laws. The PV module manufacturer provides CdTe module collection and recycling services. In any case, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. Batteries within the energy storage facility would also be recycled to the extent feasible, with minimal landfill disposal.

Mitigation Measure MM 4.17-1 requires that an onsite recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes. The onsite recycling coordinator shall also be responsible for ensuring that wastes requiring special disposal are handled according to State and County regulations that are in effect at the time of disposal. The name and phone number of the coordinator shall be provided to the Kern County Planning and Natural Resources Department prior to issuance of building permits.

#### Mitigation Measures

Implementation of Mitigation Measures MM 4.9-1, as provided above, 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: Prior to permit approval, the project proponent/operator shall hire a qualified consultant to conduct well testing to verify that no harmful substances, such as gas or oil, are leaking from the existing plugged wells onsite. Prior to testing, the qualified consultant will prepare a work plan detailing the actions needed to complete the testing and steps required if harmful substances are encountered. The work plan will be submitted to the California Geologic Energy Management Division and the Kern County Department of Planning and Natural Resources for review and approval. The testing program shall be consistent with the California Geologic Energy Management Division's Requirements for Idle Well Testing and Management, California Code of Regulations, Title 14, Division 2, Chapter 4, Subchapter 1, Article 3. Once the work is approved testing can commence within the parameters identified in the work plan. Any wells that do not meet the aforementioned testing requirements shall be resealed and properly plugged consistent with California Geologic Energy Management Division requirements. However, if there is evidence of contaminants found during testing, the qualified consultant shall prepare a report detailing the results of the testing and a work action plan to remediate any contamination found and to plug the wells. The completed report and work action plan will be submitted to California Geologic Energy Management Division and the Kern County Department of Planning and Natural Resources for comment and review.
- **MM 4.9-3:** The project proponent/operator shall continuously comply with the following:
  - a. The construction contractor or project personnel shall use herbicides that are approved by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service for use in California and are appropriate for application adjacent to natural vegetation areas (i.e., non-agricultural use). Personnel applying herbicides shall have all

appropriate State and local herbicide applicator licenses and comply with all State and local regulations regarding herbicide use.

- b. Herbicides shall be mixed and applied in conformance with the manufacturer's directions.
- c. The herbicide applicator shall be equipped with splash protection clothing and gear, chemical resistant gloves, chemical spill/splash wash supplies, and 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, MM 4.9-3, and MM 4.17-1, impacts would be less than significant.

# 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.

The nearest school to the project is El Tejon Elementary, located approximately 5 miles south in the community of Lebec. The project would not emit hazardous materials or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. Project-related infrastructure would not emit hazardous materials or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. Therefore, there would be no impact.

### **Mitigation Measures**

No mitigation would be required.

### Level of Significance

No impact.

# Impact 4.9-4: The project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

As discussed above, the project site is not identified in any of the California hazardous materials databases. Searches were completed for the parcels within the project site in the following hazardous materials lists: Cal/EPA's Cortese List including the California Department of Toxic Substances and Control's EnviroStor database of hazardous substances release sites; and GeoTracker, the California database of leaking underground storage tanks (DTSC, 2019; SWRCB, 2019). Finally, there are no active Cease and Desist Orders or Clean Up and Abatement Orders for hazardous materials/facilities in the immediate project vicinity of the project site (SWRCB, 2019). Oil exploration activities occurred between 1937 and 1971 (SCS, 2019). According to records kept by the CalGEM, six historical oil wells were identified on the project site (CalGEM, 2019). These wells are not listed as active but rather as plugged. Due to the project not being located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, no potential of creating a significant hazard to the public or the environment as a result are possible and, therefore, no impact.

### **Mitigation Measures**

No mitigation would be required.

### Level of Significance

No impact.

# 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 nearest public airport identified by the Kern County ALUCP is the Bakersfield Municipal Airport, located approximately 24 miles north of the project site. Given this distance, the project site is not within the sphere of influence (SOI) of any airport identified by the Kern County ALUCP. 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.

As discussed in Section 4.15, *Transportation*, of this EIR, the project site is located in a rural area with the primary access roads (Grapevine Road, Edmonston Pumping Plant Road) 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 project would not physically interfere with emergency vehicle access or personnel evacuation from the site.

As further described in Section 4.15, *Transportation*, of this EIR, increased project-related traffic would not cause a significant increase in congestion and or significantly worsen the existing service levels at intersections on area roads; therefore, project-related traffic would not affect emergency access to the project site or any other surrounding location. The project would not require closures of public roads, which could inhibit access by emergency vehicles. For these reasons construction and operation would have a less-than-significant impact on emergency access.

While impacts would be less than significant, Mitigation Measure MM 4.15-1 would provide further assurances for emergency access. Mitigation Measure MM 4.15-1 requires the preparation of a Construction Traffic Control Plan that considers access for emergency vehicles to the project site. During project operation, Mitigation Measure MM 4.15-1 requires the project operator obtain Kern County approval of all proposed access road designs prior to construction, further ensuring onsite emergency access is adequate.

As stated above in Section 4.9.2, the southwest quadrant of the project site is currently subject to a Right of Way easement (license) for the purpose of constructing a fire suppression road. Construction and operation of the project would encroach on the recorded right of way and could potentially cause a significant impact to fire protection services in the project area. Upon consultation with the Kern County Fire Department, there are no current or future plans to construct a fire suppression road within the project boundary. Mitigation Measure MM 4.9-4 would require the removal or amendment of the right of way easement license to remove the affected portions of the project site form the license prior to construction of the project.

### **Mitigation Measures**

Implementation of Mitigation Measure MM 4.15-1 would be required (see Section 4.15, *Transportation*, for full mitigation measure text).

**MM 4.9-4:** Prior to issuance of building permits, the project proponent shall provide proof that the encumbrance to Section 14, Township 20 North, Range 19 West, caused by license, recorded September 11, 1940, in Book 954 of Official Records page 354 Kern County Records, has been removed.

### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-4 and MM 4.15-1, impacts would be less than significant.

# 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.

The project site is not located within a high fire hazard severity zone (CAL FIRE, 2007a; CAL FIRE, 2007b). 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 a BESS which has a very low likelihood of producing a fire (generally a result of thermal runaway event from an internal short

with cascading events) and a very low likelihood of catching fire (due to the non-flammable material that are used for the structure and absence of flammable vegetation or other materials nearby). However, BESS still have the possibility of catching fire under the right circumstances (which are rare) or being damaged by fire and may generate fumes and gases that are extremely corrosive in those instances. Dry chemical, carbon dioxide, and foam are the preferred methods for extinguishing a fire involving batteries as water is not useful in extinguishing battery fires.

As discussed further in Section 4.14, *Public Services*, of this EIR, the project proponent would implement Mitigation Measure MM 4.14-1, which would require the preparation and submittal of a Fire Safety Plan to the Kern County Fire Department for review and approval. The purpose of the Fire Safety Plan would be to eliminate causes of fire, prevent loss of life and property by fire, to comply with County and County Fire Protection District standards for solar facilities, and to comply with the OSHA standard of fire prevention, 29 CFR 1910.39. The fire safety plan would address fire hazards of the different components of the project, including the energy storage facility, and would include BMPs to reduce the potential for fire and extinguishment techniques if a fire were to occur. As discussed in more detail in Section 4.18, *Wildfire*, the project would not place the gen-tie and electrical collection system, energy storage facility, or internal/perimeter dirt maintenance roads within a high fire hazard zone, and would clear all necessary vegetation, which would reduce fire risks. Mitigation Measure MM 4.14-1 would be implemented to ensure a fire safety plan for construction and operation of the project is incorporated as part of the project. With mitigation, potential impacts from wildland fires 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**

Implementation of Mitigation Measure MM 4.14-1, would be required (see Section 4.14, *Public Services*, for full mitigation measure 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, 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 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*, a limited number of industrial/utility projects are proposed in the project vicinity in addition to a large mixed-use specific plan which proposes the development of residential and commercial uses. The geographic scope of impacts associated with hazardous materials generally encompasses the project site and a 0.25-mile-radius area around the site. A 0.25-mile-radius area allows for a conservative cumulative analysis because, 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. A geographic scope of a 0.25-mile-radius area also coincides with the distance used to determine whether hazardous emissions or materials would have a significant impact upon an existing or proposed school, as discussed above.

Impacts regarding the handling, use, and/or storage of hazardous materials would be project specific and would not cumulatively contribute to impacts. An accident involving a hazardous material release during project construction or operation through upset or accident conditions including site grading and the use and transport of petroleum-based lubricants, solvents, fuels, batteries, herbicides, and pesticides to and from the project site would be location specific. Conformance with existing State and County regulations, as well as project safety design features and the implementation of Mitigation Measures MM 4.9-1 and MM 4.9-3, 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 4.9-3, and MM 4.14-1, of Section 4.14, *Public Services*, 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.

As discussed above, the nearest school to the project is El Tejon Elementary, located approximately 5 miles south in the community of Lebec. Project-related infrastructure would not emit hazardous materials or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school, and impacts would be less than significant. Given that the project is not in proximity to a school, cumulative impacts are unlikely to occur. Therefore, impacts would not be cumulatively significant.

As discussed above, the project site is not identified in any of the California hazardous materials databases. As such, development of the project would not create a significant hazard to the public or environment. Cumulative impacts are unlikely. Therefore, impacts would not be cumulatively significant.

The nearest public airport identified by the Kern County ALUCP is the Bakersfield Municipal Airport, located approximately 24 miles north of the project site. Given that the project is not in proximity to a public airport, cumulative impacts are unlikely to occur. Therefore, impacts would not be cumulatively significant.

With regard to an adopted emergency response, as analyzed above, the development of the project would not physically interfere with emergency vehicle access or personnel evacuation from the site. In addition, while impacts would be less than significant, Mitigation Measure MM 4.15-1, which requires the preparation of a Construction Traffic Control Plan, and Mitigation Measure MM 4.15-1, which requires the project operator obtain Kern County approval of all proposed access road designs prior to construction, would be implemented which would further ensure onsite emergency access is adequate during construction and operation of the project would encroach on the recorded right of way and could potentially cause a significant impact to fire protection services in the project area. Upon consultation with the Kern County Fire Department, there are no current or future plans to construct a fire suppression road within the project boundary. Mitigation Measure MM 4.9-4 would require the removal or amendment of the right of way easement license to remove the affected portions of the project site form the license prior to construction with the effects of other closely related past projects. Cumulatively considerable when viewed in connection with the effects of other closely related past projects. Cumulatively significant.

As analyzed above, to reduce potential impacts to people or structures due to a wildland fire, the project 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. In addition, as discussed in more detail in Section 4.18, *Wildfire*, the project would not place the gen-tie and electrical collection system, energy storage facility, or internal/perimeter dirt maintenance roads within a high fire hazard zone, and would clear all necessary vegetation, which would reduce fire risks. Mitigation Measure MM 4.14-1 would be implemented to ensure a fire safety plan for construction and operation of the project is incorporated as part of the project. With mitigation, potential impacts from wildland fires would be reduced to a less-than-significant level. Cumulative projects located in less developed and urbanized areas would likely implement similar mitigation measures to reduce any potential impacts from wildland fires. Therefore, impacts would not be cumulatively significant.

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). Other cumulative projects, which include a mixed-use specific plan development and a surface mine use, would also not be expected to result in providing habitat for vectors. Therefore, project's incremental effect is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus potential for cumulative impacts would be less than significant.

### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.9-4, MM 4.14-1, MM 4.15-1, and MM 4.17-1 would be required (see Section 4.14, *Public Services*; Section 4.15, *Transportation*; and Section 4.17, *Utilities and System Services*, respectively, for full mitigation measure text).

## Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, MM 4.9-4, MM 4.14-1, MM 4.15-1, and MM 4.17-1, cumulative impacts would be less than significant.

This page intentionally left blank

# 4.10.1 Introduction

This section of the EIR describes the hydrological environmental and regulatory settings, addresses potential impacts of the project on hydrology and water quality, and discusses mitigation measures to reduce impacts, where applicable. The information in this section is based on the *Pastoria Solar Project Preliminary Floodplain Study and Scour Analysis* (Kasraie, 2019) and *Water Supply Assessment* (Jacobs, 2019) prepared for the project, provided in Appendices K and N of this EIR, respectively, as well as multiple online sources and published documents.

# 4.10.2 Environmental Setting

# **Regional Setting**

The project site is located north of the Tehachapi Mountains between the Grapevine and Pastoria Creek watersheds at the very southern end of the Central Valley (Kasraie, 2019). The southern portion of the Central Valley, known as the San Joaquin Valley, is drained by the San Joaquin River. This portion of the valley drains to Tulare Lake, which no longer exists due to diversions of its sources, and is known as the Tulare Lake Hydrologic Region. Tulare Lake was the largest of several similar lakes (e.g., Kern and Buena Vista lakes) in the lower basin. The lake historically received water from the Kern, Tule, and Kaweah Rivers, as well as southern tributaries of the Kings River. Diversions for agriculture and municipal purposes has resulted in the lake drying up except for residual wetlands and occasional floods. These lakes have now been dry for many decades and the lake bottoms are now heavily farmed.

The southern San Joaquin Valley has hot, dry summers and has cool rainy winters characterized by dense tule fog (i.e., thick low-lying fog). The rainy season runs from November to April but only averages an annual average of just over 5 inches (Western Regional Climate Center [WRCC], 2019).

# Site Hydrology

### Surface Hydrology and Drainage

Topography in the project site is relatively flat to gently sloping open grassland currently used for cattle grazing. Elevations range from a high of approximately 1,169 feet in the southwest corner of the site to a low of about 1,027 feet in the northeast portion of the project site. As a result, runoff from the site drains from the southwest to the northeast at an approximate average grade of 2 percent (Jacobs, 2019). Contributing watersheds upgradient of the site include Cattle Creek, Cattle Creek 2, Fourth Creek, Grapevine Creek, Live Oak Creek, Pastoria Creek, and unnamed drainages referred to as Tributaries 34, 35, and 36 (Kasraie, 2019). An existing drainage/irrigation channel that is oriented in an east-west direction is located along the southern boundary and collects flow from smaller, more frequent events that are

prevented from flowing on the site but rather empty into Pastoria Creek to the east. Evidence of intermittent channelization can be seen across the project site; however, they are not prominent enough to register on the 2017 topographic map and thus are likely not well-defined (Kasraie, 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 FIRM for the project area, the entire site is located within a FEMA Special Flood Hazard Area that is considered to have a 1 percent annual chance of being exceeded (100-year flood) (Kasraie, 2019).

According to a hydrology study prepared for the project site, three main flooding sources affect the project site during larger flood events: discharge from Live Oak Creek through middle of the site and Cattle Creek East and Cattle Creek West across the northwest and southeast quadrants of the project site, respectively (Kasraie, 2019). The existing drainage channel on the south of the site intercepts smaller flows but appears to collect flow from smaller, more-frequent events, but larger flows occur as sheet flow across the site.

# Soil Types and Erosion

According to data from the Soil Survey for Kern County, the Project site consist primarily of six soil mapping units: Hesperia sandy loam, Psamments-Xerolls complex, Guijarral-Klipstein, Premier sandy loam, Pleito sandy clay loam, and Laval-Pleitito complex (Jacobs, 2019). These soil units are considered to be very deep, greater than 6 feet, with little likelihood of any shallow restrictive layers. None are characterized as hydric and thus are considered well drained and relatively porous. The frequency of flooding is considered rare for all soils except for the Laval Pleitito complex, located around Pastoria Creek. Susceptibility for wind erosion for Hesperia sandy loam and Psamments-Xerolls complex is considered high and moderate for susceptibility to water erosion. The project site is heavily vegetated with wild oats grassland.

# **Groundwater Resources**

# San Joaquin Valley-White Wolf Groundwater Subbasin

The project site is located within the White Wolf Subbasin of the San Joaquin Valley Groundwater Basin, which is located in the very southern portion of the San Joaquin Valley. The subbasin generally follows the White Wolf Fault along the northern boundary and the eastern, southern and western boundaries consist of bedrock contacts (California Department of Water Resources [DWR], 2018). Water bearing sediments of the subbasin include younger and older alluvium, the Kern River Formation, and the more confined Chanac and Santa Margarita formations (EKI, 2016).

Natural recharge of the basin is primarily from stream seepage from drainages that flow northerly from the Tehachapi Mountains to the south. Recharge of applied irrigation water and groundwater management strategies such as groundwater banking are also sources of recharge to the basin. Groundwater levels have stabilized from 1970 to 2000 after excessive groundwater extraction from earlier decades for agricultural purposes (EKI, 2016). By 2007, water levels appeared to have recovered to within 50 feet of pre-1960 levels (EKI, 2016). Inflows to the subbasin include approximately 32,000 acre-feet per year (afy) of inflows from

percolation of a portion of applied irrigation water, percolation from surface water streams, percolation of precipitation, wastewater discharges, and groundwater inflow from adjacent basins (EKI, 2016). Subbasin outflows include agricultural extraction groundwater flow across the White Wolf Fault, discharges to springs, and pumping for municipal and industrial use for a total of approximately 28,500 afy. The net change in storage for the subbasin is approximately 3,500 afy (EKI, 2016).

# 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 Boards (RWQCBs). The project site is within the Central Valley RWQCB. Projects that disturb one or more acres, including the proposed project, are required to obtain NPDES coverage under the Construction General Permits.

**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 Stormwater 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 Stormwater 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 Central Valley RWQCB at the project site.

### **National Flood Insurance Act**

FEMA is responsible for managing the National Flood Insurance Program (NFIP), which makes federallybacked 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 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 stormwater permits to protect the water quality objectives and beneficial uses of local surface waters as provided in the Central Valley Region Water Quality Control Plan (Basin Plan) (RWQCB, 2018).
### 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 San Joaquin Valley – White Wolf is currently designated as a medium priority basin under SGMA. Thus, the water districts in the area, Arvin-Edison Water Storage District, Tejon-Castac Water District, and Wheeler Ridge Maricopa Water Storage District formed the White Wolf Subbasin Groundwater Sustainability Agency, are required to comply with SGMA.

## Local

### Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan for hydrology and water resources applicable to the proposed project are provided below. Policies, goals, and implementation measures in the General Plan that are not specific to development are not listed below. However, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

#### Land Use, Open Space, and Conservation Element

#### **1.3: Physical and Environmental Constraints**

#### Policies

Policy 1:	Kern County will ensure that new developments will not be sited on land that is physically
	or environmentally constrained (Map Code 2.1 [Seismic Hazard], Map Code 2.2
	[Landslide], Map Code 2.3 [Shallow Groundwater], Map Code 2.5 [Flood Hazard], Map
	Codes from 2.6 – 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn
	Dump Hazard]) to support such development unless appropriate studies establish that such
	development will not result in unmitigated significant impact.

- Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.
- Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.
- Policy 11: Protect and maintain watershed integrity within Kern County.

#### Implementation Measures

Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.

- Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.
- Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.
- Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

#### 1.9: Resources

#### Policy

Policy 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.

#### **1.10:** General Provisions; **1.10.6:** 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

prevent the degradation of the watershed to the extent practical.

#### Implementation Measure

Measure Y: Promote efficient water use by utilizing measures such as:

• Requiring water-conserving design and equipment in new construction;

impervious surfaces as required by the California Environmental Quality Act (CEQA), to

- Encouraging water-conserving landscaping and irrigation methods; and
- Encouraging the retrofitting of existing development with water conserving devices.

### **Kern County Zoning Ordinance**

#### Chapter 19.70: Floodplain Combining District

Section 19.70.040 prohibits the following uses in the Floodplain Combining District, as applicable to the proposed project:

#### Implementation Measures

- Measure B: All uses that will likely increase the flood hazard or affect the water-carrying capacity of the floodplain beyond the limits resulting from encroachment as specified in Section 19.70.130.
- Measure C: Dumping, stockpiling, or storage of floatable substances or other materials which, in the opinion of the Kern County and Survey Services Department, will add to the debris loads of the stream or watercourse, unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with Section 19.70.130.
- Measure D: Storage of junk or salvage operations.
- Measure E: Oil storage tanks or processing equipment, unless flood-proofed or sufficiently elevated above the Base Flood Elevation, as determined by the Kern County Public Works Department.
- Measure F: Individual sewage disposal systems (e.g., septic tank systems), unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with the requirements of the Kern County Health Department so as to minimize infiltration of floodwaters into the systems and discharges from the systems into the floodwaters.
- Measure G: Sources of water supply (e.g., wells, springs) unless protected by flood control devices approved by the Kern County Public Works Department and constructed in accordance with the requirements of the Kern County Health Department so as to minimize infiltration of floodwaters.

### Kern County Code of Building Regulations

#### Grading Code (Chapter 17.28)

**Chapter 17.28 Kern County Grading Code.** Requirements of the Kern County Grading Code will be implemented. A grading permit will be obtained prior to commencement of construction activities. Of particular note with respect to hydrology and water quality is Section 17.28.140, Erosion Control, which addresses the following:

• **Slopes.** The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to calling for final approval. Where cut slopes are not subject to erosion due to the erosion-resistant character of the materials, such protection may be omitted.

- **Other Devices.** Where necessary, check dams, cribbing, riprap or other devices or methods shall be employed to control erosion and provide safety.
- **Temporary Devices.** Temporary drainage and erosion control shall be provided as needed at the end of each work day during grading operations, such that existing drainage channels would not be blocked. Dust control shall be applied to all graded areas and materials and shall consist of applying water or another approved dust palliative for the alleviation or prevention of dust nuisance. Deposition of rocks, earth materials or debris onto adjacent property, public roads or drainage channels shall not be allowed.

## Kern County Floodplain Management Ordinance (17.48)

Any construction that takes place within areas of special flood hazards, areas of flood-related erosion hazards, and areas of mudslide (i.e., mudflow) hazards within the jurisdiction of unincorporated Kern County will comply with the requirements and construction design specifications of this ordinance. Any required development permits will be obtained prior to commencement of construction activities. Sections 17.48.250 through 17.48.350 of the ordinance elaborate on the standards of construction in the special flood hazards area. This includes the requirement of 1 foot of freeboard clearance above the calculated maximum flood depths for all facilities within a 100-year floodplain, and.

#### Kern County Development Standards

The Kern County Development Standards apply to all developments within Kern County that are outside of incorporated cities. These standards establish minimum design and construction requirements that will result in improvements that are economical to maintain and will adequately serve the general public. The requirements set forth in these standards are considered minimum design standards and will require the approval of the entity that will maintain the facilities to be constructed prior to approval by the County.

#### Kern County Water Quality Control Plan

Each of the nine RWQCBs adopts a Water Quality Control Plan which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's groundwater and surface waters, and local water quality conditions and problems. Water quality problems in the regions are listed in these plans, along with the causes, if they are known. Each RWQCB is to set water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance, with the understanding that water quality can be changed somewhat without unreasonably affecting beneficial uses. The Kern County Engineering and Survey Services Department requires the completion of an NPDES applicability form for all construction projects disturbing one or more acre within Kern County. This form requires the project proponent to provide background information on construction activities. Applicants must apply for the permit under one of the following four conditions:

- 1. All stormwater is retained onsite and no stormwater runoff, sediment, or pollutants from onsite construction activity can discharge directly or indirectly offsite or to a river, lake, stream, municipal storm drain, or offsite drainage facilities.
- 2. All stormwater runoff is not retained on site, but does not discharge to a Water of the United States (i.e., drains to a terminal drainage facility). Therefore, an SWPPP has been developed and BMPs must be implemented.

- 3. All stormwater runoff is not retained on site, and the discharge is to a Water of the United States. Therefore, a Notice of Intent (NOI) must be filed with the State Regional Water Resources Control Board prior to issuance of the building permit. Also, an SWPPP has been developed and BMPs must be implemented.
- 4. Construction activity is between 1 to 5 acres and an Erosivity Waiver was granted by the SWRCB. BMPs must be implemented.

## 4.10.4 Impacts and Mitigation Measures

## Methodology

This section analyzes impacts on hydrology and water quality from the implementation of the project based on changes to the environmental setting as described above, identified drainage conditions in the project site, and the current regulatory framework. The project's potential impacts to hydrology and water quality have been evaluated using the *Pastoria Solar Project Preliminary Floodplain Study and Scour Analysis* (Kasraie, 2019) and the *Water Supply Assessment* (Jacobs, 2019) prepared for the project, provided in Appendices K and N of this EIR, respectively, as well as other resources including 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 *CEQA Guidelines* Appendix G, to determine if a project could potentially have a significant adverse effect on hydrology and water quality.

A project could have a significant impact on hydrology and water quality if it would:

- a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
- b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner 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 degrade surface or groundwater 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 site is relatively flat, it is anticipated that grading would be limited in most areas. These activities could 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.

Potential impacts on water quality from erosion and sedimentation are expected to be localized and temporary during construction. Stormwater runoff from the project site would not discharge to waters of the United States since the project area is within a watershed that is not hydrologically connected to a navigable waterway. However, according to the Kern County Public Works Department NPDES applicability form, the project would be required to implement an SWPPP during construction. Per Mitigation Measure MM 4.7-3 in Section 4,7, *Geology and Soils*, the SWPPP would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality, and would be applicable to all areas of the project, including the solar fields and the gen-tie line. In addition, prior to the commencement of construction activities, the project proponent would be required to adhere to the requirements of the Kern County Grading Code. This includes implementation of various measures designed to prevent erosion and control drainage onsite, thereby further preventing the potential sedimentation and subsequent degradation of stormwater.

During project construction, any activity that results in the accidental release of hazardous or potentially hazardous materials could result in water quality degradation. Further, any construction activity that results in the accidental release of pollutants, hazardous or potentially hazardous materials could result in water quality degradation. Materials that could contribute to this impact include, but are not limited to, diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, lubricant grease, cement slurry, and other fluids utilized by construction and maintenance vehicles and equipment. Motorized equipment could leak hazardous materials such as motor oil, transmission fluid, or antifreeze due to inadequate or improper maintenance, unnoticed or unrepaired damage, improper refueling, or operator error.

As noted in Section 4.9, *Hazards and Hazardous Materials*, of this EIR, Mitigation Measure MM 4.9-1 would require the project proponent to provide a Hazardous Materials Business Plan that would delineate hazardous material and hazardous waste storage areas; describe proper handling, storage, transport, and disposal techniques; describe methods to be used to avoid spills and minimize impacts in the event of a spill; describe procedures for handling and disposing of unanticipated hazardous materials encountered during construction; and establish public and agency notification procedures for spills and other emergencies, including fires. Therefore, with implementation of Mitigation Measures MM 4.7-3 and MM 4.9-1, impacts to water quality would be less than significant during construction.

#### Operation

The solar facilities would require limited use of certain hazardous materials for routine operations and maintenance. Accidental release of such materials could include fuels, paints, coatings, lubricants, and transformer oil, which would result in water quality degradation should the materials become entrained in stormwater. This would result in a potentially significant impact on water quality. However, as described above, implementation of Mitigation Measure MM 4.9-1 would require the implementation of a Hazardous Materials Business Plan that would ensure safe handling of hazardous materials onsite and provide the means for prompt cleanup in the event of an accidental hazardous material release. There would be no hazardous materials associated with the interconnections to the gen-tie lines.

Water quality could also be degraded by non-hazardous materials during operation activities. During dry periods, impervious surfaces (i.e., hardscape surfaces such as foundations and buildings) can collect greases, oils, and other vehicle-related pollutants. During storm events, these pollutants can mix with stormwater and degrade water quality. However, per Mitigation Measure MM 4.10-1, a drainage plan would be prepared in accordance with the Kern County Development Standards and Kern County Code of Building Regulations. Therefore, the drainage plan would include post-construction structural and nonstructural BMPs that could include features such as drainage swales for collection of runoff prior to offsite discharge. Adherence to these requirements would minimize potential for operation period water quality degradation. Apart from infrequent cleaning of panels with water that would result in minimal runoff, no other discharges MM 4.9-1 and MM 4.10-1, project operation would not violate water quality standards or waste discharge requirements, or otherwise degrade water quality.

#### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.7-3 and MM 4.9-1 would be required (see Sections 4.7, *Geology and Soils*, and 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).

- **MM 4.10-1:** 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. Numerical stormwater model for the project site (with solar posts and without), and would evaluate existing and proposed (with project) drainage conditions during a 100-year storm 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. The drainage plan would include engineering recommendations to be incorporated into the project design and applied within the site boundary. Engineering recommendations will include measures to offset increases in stormwater runoff that would result from the project, as well as implementation of design measures to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding onsite or offsite.

- d. The final design of the solar arrays shall include 1 foot of freeboard clearance above the calculated maximum flood depths (for a 100-year event) for the solar arrays or the finished floor of any permanent structures. Solar panel sites located within a 100-year floodplain shall be installed on piers so that the panels are located 1 foot above the calculated maximum flood depths or graded to direct potential flood waters without increasing the water surface elevations more than 1 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 4.7-3, MM 4.9-1, and MM 4.10-1, impacts would be less than significant.

# Impact 4.10-2: The project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

The Project site is primarily located on undeveloped land with no current water demands. Construction of the project is anticipated to use approximately 58.6 acre-feet (af) of water over the construction period of approximately 12 months, and the project's operational water requirement is expected to be approximately 1.53 afy. The water demands will be met by the existing water distribution lines that occur along the perimeter of the site. An agreement has been made with Tejon-Castac Water District (TCWD) to use up to 2 afy from four different existing turnouts. Water in the pipelines is sourced from State Water Project (SWP) surface water through the regional wholesale agency—Kern County Water Agency (KCWA). KCWA's long term contract with the SWP is for 982,730 afy with projected deliveries in the future of 600,000 afy over the long term (Jacobs, 2019). Therefore, the relatively small volume of water required for the project could be easily met with SWP surface water and no groundwater extraction would be necessary.

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 constructed which are 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 considered impervious, the majority of the site would remain pervious and thus would not substantively interfere with groundwater recharge. Therefore, the project would leave large areas of pervious surfaces intact that would continue to absorb stormwater runoff and would thus not result in a significant reduction of groundwater infiltration rates. The project would have a less than significant impact on groundwater supplies related to groundwater recharge at the site.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

Impact 4.10-3: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner than would result in substantial erosion and/or sedimentation on-site or off-site.

Required grading activities for the proposed Project could 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 (scour) and subsequent sedimentation downstream. Further, the impervious surfaces introduced to the site due to development of the project could generate additional stormwater runoff on site, which could exacerbate potential erosion and sedimentation on site or downstream.

According to the scour analysis that was conducted for the project site, estimates for the amount of scour at each of the individual panel foundation panels was made using methodologies consistent with the Los Angeles County Department of Public Works Sedimentation Manual. When subjected to flood flows, each foundation post has the potential to create local scour in the same manner as a bridge pier located in a stream. This pier scour approach, while very conservative, found that total scour depths would range from no scour up to 4 to 5 feet at just 31 of 69,000 panel posts (Kasraie, 2019).

As described above, the proposed project would implement an SWPPP per Mitigation Measure MM 4.7-3 that would require preservation of existing vegetation and topography to the maximum extent feasible, as well as include erosion and sediment control BMPs designed to prevent erosion and sedimentation from occurring during project construction. Compliance with the Kern County Grading 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 4.10-1 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 4.7-3 and MM 4.10-1, impacts would be less than significant.

#### Mitigation Measures

Implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1 would be required (see Section 4.7, *Geology and Soils*, for full mitigation measure text).

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1, impacts would be less than significant.

# Impact 4.10-4: The project would substantially alter the existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, 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.

As discussed under Impact 4.10-3 above, grading and installation of project facilities could alter existing onsite drainage patterns and flowpaths. This could cause localized flooding during major events along the margins of the project area, or within the project area, depending upon how stormwater is managed under final project design. During operation of the project, large amounts of pervious ground surface would remain onsite that would continue to absorb the majority of surface flows. According to the floodplain study for the site, the modeled flow patterns on the site under the proposed conditions would result in an increase of an inch or less in 100-year water surface elevations (Kasraie, 2019). Two groundwater models were used to estimate the effects of the proposed condition and the relatively minor effect of the posts and piers of the project were consistent between models. In addition, Mitigation Measure MM 4.10-1 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 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**

Implementation of Mitigation Measure MM 4.10-1 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

# Impact 4.10-5: The project would create or contribute runoff water that would exceed the capacity of existing or planned stormwater 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 stormwater requirements, which include measures to address stormwater controls on both management of runoff volume and water quality, including controlling erosion and protection of water quality of stormwater runoff. During operation, most of the project site would remain as pervious surfaces thus allowing infiltration of the runoff produced by the new minor impervious surfaces. The project would not exceed the capacity of any existing or planned infrastructure and the implementation of Mitigation Measure MM 4.10-1 would minimize potential increases in stormwater flow and other project-induced changes to drainage patterns to less than significant levels.

#### Mitigation Measures

Implementation of Mitigation Measure MM 4.10-1 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

## Impact 4.10-6: The project would place within a 100-year flood hazard area structures that would impede or redirect flood flows.

As noted in Section 4.10.2, *Environmental Setting*, the FEMA FIRMs show that approximately entire site is located within a FEMA Special Flood Hazard Area (Kasriae, 2019). The project would introduce structures on the project site such as the substation, energy storage system, and the solar panel supports that could impede or redirect flood flows. However, most of the improvements of the project consist of solar panels which are mounted on steel support posts which spread out across the project site and as noted above would have a minor effect on flood elevations. The floodplain study for the project site determined that 100-year water surface elevations over the entire study area would be an inch or less under the proposed conditions (Kasraie, 2019). As a result, the proposed improvements would not be expected to impede or redirect flood flows. Therefore, impacts related to flooding would be less than significant. In addition, implementation of Mitigation Measure MM 4.10-1 would require preparation of a drainage plan that would design project facilities to have 1 foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures. Additionally, per Mitigation Measure MM 4.10-1, grading for the project would be designed so that water surface elevations during flood events would not be increased by more than 1 foot.

#### **Mitigation Measures**

Implementation of Mitigation Measure MM 4.10-1 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

## Impact 4.10-7: The project would result in a flood hazard, tsunami, or seiche zone, that would risk release of pollutants due to project inundation.

As described above, the project site is located in the 100-year flood zone. The floodplain study determined that the project would cause negligible changes in 100-year flood elevations (Kasraie, 2019). As noted above, implementation of the drainage plan required by Mitigation Measure MM 4.10-1 would ensure that improvements that would include the storage of hazardous materials would be required to have at least 1 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 amount of storage of hazardous materials at the site and the implementation of the drainage plan which would provide flood protection measures, the negligible changes in flood water surface elevations from the project, the potential for release of pollutants due to project inundation would be less than significant.

#### **Mitigation Measures**

Implementation of Mitigation Measure MM 4.10-1 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

## Impact 4.10-8: The project would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

As noted above, the project site is located within the Central Valley RWQCB and is subject to the applicable requirements of the Basin Plan administered by the RWQCB in accordance with the Porter-Cologne Water Quality Control Act. As discussed above, the project would include required BMPs and drainage control requirements that would be consistent with the Basin Plan.

The project site is also located within the White Wolf Subbasin, which is a moderate priority basin under SGMA. However, the project would not require groundwater for construction or operation and the site would remain largely pervious to allow for continued infiltration of precipitation. 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, a number of industrial/utility projects are proposed in the project vicinity. Most of the projects are located within the southern part of the San Joaquin Valley Hydrologic Unit and the White Wolf Subbasin.

Similar to the proposed project, all cumulative projects would not discharge to waters of the United States due to their location within the San Joaquin Valley, which is effectively a closed basin with no outlet to the Pacific Ocean. All projects that would not retain all runoff onsite would be required to prepare an SWPPP, just as with the proposed project under Mitigation Measure MM 4.7-3, which would include BMPs designed to prevent the mixture of sediment and other pollutants with stormwater and degrading water quality. Furthermore, the proposed project would implement a Hazardous Materials Business Plan as part of Mitigation Measure MM 4.9-1 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 also be required to comply with hazardous material regulations. Therefore, cumulative scenario impacts associated with water quality degradation would not be cumulatively considerable, and the project would not contribute to a cumulative impact on water quality.

With regard to water supply, the proposed project would not use any groundwater as all water supply is proposed to be sourced from the SWP. As a result, there could be no cumulative effect to the groundwater subbasin.

With respect to erosion, drainage, and flooding, the project would implement Mitigation Measure MM 4.10-1, which would minimize direct impacts on erosion, drainage, and flooding. It is anticipated that other cumulative scenario projects would be required to implement similar measures, in order to minimize erosion, drainage, and flooding related impacts. Additionally, drainage related impacts from cumulative scenario projects would be primarily localized. Therefore, cumulative scenario impacts on erosion, drainage, and flooding are not anticipated to be cumulatively considerable, and the project would not contribute to a cumulative impact on flooding, erosion, or drainage.

#### Mitigation Measures

Implementation of Mitigation Measures MM 4.7-3, MM 4.9-1, and MM 4.10-1 would be required (see Sections 4.7, *Geology and Soils*, and 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-3, MM 4.9-1, and MM 4.10-1, impacts would be less than significant.

This page intentionally left blank

## 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 and the Kern County Zoning Ordinance.

## 4.11.2 Environmental Setting

## **Onsite Land Uses**

The project site is currently vacant and undeveloped and has historically been used as grazing land. Cattle feeding/watering stations are located in the northwest quadrant, and a communications-repeater structure is located in the northeast corner. The cattle feeding/watering stations would be removed as part of the project. Currently, there are six plugged exploratory oil wells across the project site (see Chapter 3, *Project Description*, Figure 3-6, *Onsite Plugged Wells*).

As discussed in Section 4.2, *Agriculture and Forestry Resources*, the project site is not designated by the California Department of Conservation (DOC) as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The DOC designates the project site as "Grazing Land" (DOC, 2017). The project site is currently subject to an existing Williamson Act Land Use contract filed for non-renewal in 2014 and set to expire in 2023; thus, the project would require a Williamson Act Land Use Contract Cancellation to facilitate the implementation of the project.

As shown in Chapter 3, *Project Description*, Figure 3-5, *Flood Zone*, the project site is designated as Zone "A" on the Flood Insurance Rate Map (FIRM) as issued by the Federal Emergency Management Agency (FEMA), which indicates the site is in an area of flood hazard. The project site is not identified as a wetland area on the National Wetlands Inventory.

A portion of the project site is designated as a mineral recovery area by the Kern County General Plan and as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. Based on a review of records maintained by the California Geologic Energy Management Division (CalGEM) and as discussed above, six plugged exploratory oil wells were identified on the project site as shown in Chapter 3, *Project Description*, Figure 3-6, *Onsite Plugged Wells*. Records maintained by the Kern County Assessor indicate there is one Mineral Rights Assessor Parcel Number (APN) (241-220-10) within the boundaries of the project site.

As shown in Table 4.11-1, *Project Site and Surrounding Land Use Designations and Zoning Classifications*, below, and illustrated in Chapter 3, *Project Description*, Figure 3-7, Existing General Plan Designations, of this EIR, the project site has a General Plan designation of 8.1/2.5 (Extensive Agriculture [20-acre

minimum]/Flood Hazard Combining Area), 8.3/2.5 (Mineral and Petroleum [5-acre minimum]/Flood Hazard Combining Area), and 8.4/2.5 (Resource Management [20-acre minimum]/Flood Hazard Combining Area).

As shown in Table 4.11-1, below, and illustrated in Chapter 3, *Project Description*, Figure 3-9, *Existing Zoning*, of this EIR, the project site is zoned as A (Exclusive Agriculture). The A District permits solar energy electrical generators subject to the approval of a conditional use permit. The project site is also included within Kern County Agricultural Preserve Number 19 boundary as Agricultural Preserve inclusion is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture).

## Surrounding Land Uses

As described in Chapter 3, *Project Description*, of this EIR, land uses in the region consist largely of agriculture with a mix of row crops and grazing land. The general area to the north of the project site is primarily used for almond and pistachio farming. The area to the south and west of the project site is predominantly grazing land while the area to the east has a few vineyards. Existing infrastructure within the area includes the Pastoria Energy Facility (PEF), a natural gas-fired, combined-cycle power plant, located approximately 0.5 miles east of the project site. The California Aqueduct, which runs east-west in the vicinity of the project and extends to Department of Water Resources' Edmonston Pumping Plant, is approximately 0.7 miles south of the project site. There is also a gravel quarry operation approximately 0.8 miles to the southeast of the site, between the PEF and Edmonston Pumping Plant.

The nearest residence is about 2.5 miles to the northwest and there is a small cluster of homes about 2.7 miles northwest. The nearest populated areas to the project site are the unincorporated communities of Grapevine, Wheeler Ridge, Mettler, and Lebec, which are located approximately 3 miles west, 5 miles northwest, 9 miles northwest, and 5 miles southwest of the project site, respectively.

As illustrated in Chapter 3, *Project Description*, Figure 3-7, *Existing General Plan and Land Use Designations*, and summarized in **Table 4.11-1**, *Project Site and Surrounding Land Use Designations and Zoning Classifications*, surrounding land uses are designated 8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard); 8.3/2.5 (Extensive Agriculture/Flood Hazard); 8.4/2.5 (Mineral and Petroleum/Flood Hazard). Surrounding land uses are located within the A (Exclusive Agriculture) Zone District.

Project Site	Existing Land Use Existing General Plan Designation			
	Undeveloped Open Space; Grazing Land	8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard);	A (Exclusive Agriculture)	
		8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard);		
		8.4/2.5 (Mineral and Petroleum/Flood Hazard)		
Surrounding Land Use				
North of Project Site	Undeveloped Open Space; Grazing Land; Orchard; Vineyards; Oil Pumping Facility	8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard);	A (Exclusive Agriculture)	
		8.4/2.5 (Mineral and Petroleum/Flood Hazard)		
South of Project Site	Grazing Land; California Aqueduct; Edmonston Pumping Plant Road	8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard)	A (Exclusive Agriculture)	
East of Project Site	Undeveloped Open Space; Grazing Land; a Natural Gas Powered Co- generation Facility; Griffith Aggregate Mine; Edmonston Pumping Plant; Vineyards	8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard)	A (Exclusive Agriculture)	
West of Project Site	Undeveloped Open Space; Grazing Land	8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard)	A (Exclusive Agriculture)	

#### TABLE 4.11-1: PROJECT SITE AND SURROUNDING LAND USES AND ZONING CLASSIFICATIONS

## 4.11.3 Regulatory Setting

## Federal

There are no applicable federal regulations for this issue area.

## State

There are no applicable state regulations for this issue area.

## Local

Land use and planning decisions within and adjacent to the project site are guided and regulated by the Kern County General Plan and Kern County Zoning Ordinance. The Kern County General Plan contains goals, objectives, and policies and provides an overall foundation for establishing land use patterns. For this land use impact analysis, this section lists all relevant goals, objectives, policies, and implementation measures related to the project. The Zoning Ordinance contains regulations through which the Kern County General Plan's provisions are implemented. The most relevant regulations pertaining to solar energy development are presented below.

### Kern County General Plan

The Kern County General Plan is a policy document designed to provide long-range guidance for planning decisions that affect the growth and resources of unincorporated Kern County. Included in the Kern County General Plan is the Land Use, Open Space, and Conservation Element, which provides for a variety of land uses for future economic growth while also assuring the conservation of Kern County's agricultural, natural, and resource attributes. Within the Land Use, Open Space, and Conservation Element, policy areas are separated by overlay designations, known as "Map Codes", which are identified on the Kern County General Plan maps for each section of the County and include the following categories: (1) non-jurisdictional land (State and federal); (2) environmental constraints overlay; (3) public facilities; (4) non-jurisdictional land (accepted county plan areas, rural communities and specific plan required); (5) residential; (6) commercial; (7) industrial; and (8) resource.

According to the Kern County General Plan Central Section Map, the project site is located within Map Codes 8.1/2.5 (Intensive Agriculture [20-acre minimum]/Flood Hazard Combining Area), 8.3/2.5 (Extensive Agriculture [20-acre minimum]/Flood Hazard Combining Area), and 8.4/2.5 (Mineral and Petroleum [5-acre minimum]/Flood Hazard Combining Area). 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 and the Kern River Plan. Each element establishes goals, policies, and implementation measures that guide planning decisions in unincorporated Kern County. The goals, policies, and implementation measures relevant to the project are listed below.

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

#### **1.3: Physical and Environmental Constraints**

#### Goal

Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.

- 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 to 2.9, Map Code 2.10 [Nearby Waste Facility], and Map Code 2.11 [Burn Dump Hazard]) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.
- Policy 3: Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.
- Policy 8: Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.

- Policy 9: Construction of structures that impede water flow in a primary floodplain will be discouraged.
- Policy 10: The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.
- Policy 11: Protect and maintain watershed integrity within Kern County.

#### Implementation Measures

- Measure D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.
- Measure F: The County will comply with the Colbey-Alquist Floodplain Management Act in regulating land use within designated floodways.
- Measure H: Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.
- Measure J: Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.
- Measure N: Applicants for new discretionary development should consult with the appropriate Resource Conservation District and the California Regional Water Quality Control Board regarding soil disturbances issues.

#### **1.4: Public Facilities and Services**

#### Goals

- Goal 1: Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.
- Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.

- Policy 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.

#### 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 2:	Protect areas of important mineral, petroleum, and agricultural resource potential for future use.		
Goal 3:	Ensure the development of resource areas minimize effects on neighboring resource lands.		
Goal 4:	Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.		
Goal 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 11: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood protection ordinances.
- Policy 12: Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.
- Policy 14: Emphasize conservation and development of identified mineral deposits.
- Policy 17: Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.
- Policy 25: Discourage incompatible land use adjacent to Map Code 8.4 (Mineral and Petroleum) areas.

#### Implementation Measures

- Measure B: Areas designated as Resource Reserve (Map Code 8.2), Extensive Agriculture (Map Code 8.3), Resource Management (Map Code 8.5) that are under Williamson Act Contracts or Farmland Security Zone Contracts will have a minimum parcel size of 80 acres until such time as a contract is expired or is cancelled, at which time the minimum parcel size will become 20 acres.
- Measure F: Prime agricultural lands, according to the Kern County Interim-Important Farmland 2000 map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.
- Measure G: Property placed under the Williamson Act/Farmland Security Zone Contract must be in a Resource designation.
- 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).

#### **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 CEQA documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

#### Implementation Measure

Measure E: All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the 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

- 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<sub>10</sub> and PM<sub>2.5</sub> 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 outlaying areas.
  - j. Other strategies that may be recommended by the local Air Pollution Control Districts.
- Measure J: The County should include  $PM_{10}$  control measures as conditions of approval for subdivision maps, site plans, and grading permits.

#### 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

#### 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.

- 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 constructionrelated 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

- 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: Highways; 2.3.3: Highway Plan

#### Goal

Goal 5: Maintain a minimum Level of Service (LOS) D.

- Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section lines. This is because the road center line can be determined by an existing survey.
- Policy 2: This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond 2010. Where the Kern County Planning and Natural Resources Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert regions for arterial right-of-way. The County shall routinely protect all midsection lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow construction on surveyed section and midsection lines, right-of-way width shall be the size shown on the diagram map. No surveyed section and midsection "grid" will comprehensively apply to the Mountain Region.
- Policy 3: This plan's road-width standards are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.
  - Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;

- Arterial [Major Highway] Minimum 110-foot right-of-way;
- Collector [Secondary Highway] Minimum 90-foot right-of-way;
- Commercial-Industrial Street Minimum 60-foot right-of-way; and
- Local Street [Select Local Road] Minimum 60-foot right-of-way.

#### Implementation Measure

Measure A: The Planning Department shall carry out the road network Policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. Planning Department can help developers and property owners in identifying where planned circulation is to occur.

#### 2.3.4: Future Growth

#### Goal

Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

- Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below Level of Service (LOS) D. Utilization of the CEQA process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space, and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.
- Policy 4: As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along State routes are necessary then roads shall be built to Caltrans standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.
- Policy 5: When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.
- Policy 6: The County may accept a developer's road into the county's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.

#### Implementation Measure

Measure C: Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.

#### 2.3.10: Congestion Management Programs

#### Goals

- Goal 1: To satisfy the trip reduction and travel demand requirements of the Kern COG's CMP.
- Goal 2: To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.

#### Policies

- Policy 1: Pursuant to California Government Code 65089(a), Kern County has designated the Kern COG as the County's Congestion Management Agency (CMA).
- Policy 2: The CMA is responsible for developing, adopting, and annually updating a CMP. The CMP is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also the Kern COG), regional transportation providers, local governments, Caltrans, and the air pollution control district.

#### Implementation Measures

- Measure A: The Kern 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: Other Modes; 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:	California Department of Transportation (Caltrans) should be made aware of the heavy
	truck activity on Kern County's roads.
Policy 2:	Start a program that monitors truck traffic operations.

Policy 3: Promote a monitoring program of truck lane pavement condition.

#### 2.5.4: Transportation of Hazardous Materials

#### Goal

Goal 1: Reduce risk to public health from transportation of hazardous materials.

#### 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.
- Policy 2: Kern County and affected cities should reduce use of County-maintained roads and citymaintained streets for transportation of hazardous materials.

#### Implementation Measure

Measure A: Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.

#### Chapter 3: Noise Element

#### 3.2: Noise Sensitive 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.

- Policy 1: Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.
- Policy 2: Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health.

- Policy 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<sub>dn</sub> and interior noise levels in excess of 45 dB L<sub>dn</sub>.
- 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 Measures

- Measure B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.
- Measure C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.

#### 4.5: Landslides, Subsidence, Seiche, and Liquefaction

#### Policy

Policy 3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

#### 4.6: Wildland and Urban Fire

#### Policies

- Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.
- Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.
- Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.
- Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

#### Implementation Measure

Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

#### 4.9: Hazardous Materials

#### Implementation Measure

Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

#### 4.10: Abandoned Open Shafts and Wells

In some areas of the County, there exist abandoned mine shafts that, if not secured, contribute to the injury of or fatality to unsuspecting members of the public. Many such shafts are within lands owned and controlled by various agencies of the Federal government.

#### Policies

- Policy 1: The County should protect residents from the hazards of improperly abandoned mine shafts.
- Policy 2: The County should protect residents from the hazards associated with development in areas where wells have been drilled and abandoned for exploration and/or production of oil and natural gas.

#### Implementation Measure

Measure B: Support the construction site review program of the Department of Oil, Gas and Geothermal Resources that ensures that wells are precisely located, properly plugged and abandoned, and tested for leakage prior to development of the area.

#### 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: Electricity Resources and Generation; 5.4.5: Solar Energy Development

#### Goal

Goal 1.	Encourage	safe and	orderly	commercial	solar d	evelopment
00ai 1.	Lincourage	sale and	orucity	commercial	solar u	evelopment.

#### 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.

### 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/Sustainable Communities Strategy** (RTP/SCS)

The latest Regional Transportation Plan (RTP) for Kern County identifies future transportation improvements needed to serve the projected transportation needs of the County. The RTP details the existing transportation systems; sets goals, polices and projects; and identifies funding mechanisms for these projects. Transportation projects identified in the RTP include highway, street, and roadway projects; mass transportation; railroad; and other programs and projects related to the transportation needs of the County. It was prepared by the Kern Council of Governments (COG), and was adopted in August 16, 2018. The 2018 RTP is a 20-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County. It was developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, State, and federal agencies. New to the 2018 RTP, California's Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, calls for the Kern RTP to include a Sustainable Communities Strategy (SCS) that reduces greenhouse gas (GHG) emissions from passenger vehicles and light-duty trucks by 5 percent per capita by 2020 and 10 percent per capita by 2035 as compared to 2005. In addition, SB 375 provides for closer integration of the RTP/SCS with the Regional Housing Needs Allocation (RHNA) ensuring consistency between low income housing needs and transportation planning.

The intent of the SCS is to achieve the State's emissions reduction targets for automobiles and light trucks. The SCS will also provide opportunities for a stronger economy, healthier environment, and safer quality of life for community members in Kern County. The RTP/SCS seeks to: improve economic vitality; improve air quality; improve the health of communities; improve transportation and public safety; promote the conservation of natural resources and undeveloped land; increase access to community services; increase regional and local energy independence; and increase opportunities to help shape our community's future.

The 2018 RTP/SCS financial plan identifies how much money is available to support the region's transportation investments. The plan includes a core revenue forecast of existing local, State, and federal sources along with funding sources that are considered to be reasonably available over the time horizon of the RTP/SCS. These new sources include adjustments to State and federal gas tax rates based on historical trends and recommendations from two national commissions (National Surface Transportation Policy and Revenue Study Commission and National Surface Transportation Infrastructure Financing Commission), leveraging of local sales tax measures, local transportation impact fees, potential national freight program/freight fees, future State bonding programs, and mileage based user fees (Kern COG, 2018).

## Kern County's Solid Waste Management Plan

The Solid Waste Management Plan is a comprehensive guide for all solid waste management activities in the County. The plan identifies the existing solid waste generation and disposal facilities in Kern County, estimates future solid waste disposal demand, and identifies programs to meet this future need.

## Kern County and Incorporated Cities Hazardous Waste Management Plan

The Kern County and Incorporated Cities Hazardous Waste Management Plan focuses on the siting of hazardous waste disposal facilities, the transport of hazardous waste in the County, protection of water resources from hazardous waste contamination, and public education concerning the use and disposal of hazardous waste.

## 4.11.4 Impacts and Mitigation Measures

## Methodology

The potential impacts associated with the project are evaluated on a qualitative basis through a comparison of the existing land use and the proposed land uses, in consideration of the applicable planning goals identified above. Compliance with the aforementioned policies is illustrated in consistency tables provided in the *Project Impacts* section below. The change in the land use on the project site is significant if the effect described under the thresholds of significance below occurs as a result of the project. The evaluation of the project impacts is based on professional judgement, analysis of the County's land use policies and the significance criteria established in *CEQA Guidelines* Appendix G, which the County has determined appropriate for this EIR.

## **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 land use.

A project could have a have a significant adverse effect on land use if the project would:

- a. Physically divide an established community;
- b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

## **Project Impacts**

## Impact 4.11-1: The project would cause a significant environmental impact due to physically dividing an established community.

The components of the project would be developed on vacant, undeveloped land that has been historically used for grazing. Land uses surrounding the project site are primarily open grazing land, or land in agricultural production. The PEF, a natural gas-fired, combined-cycle power plant, is located approximately 0.5 miles east of the project site. The California Aqueduct, which runs east-west and extends to the Edmonston Pumping Plant, is approximately 0.7 miles south of the project site. There is also a gravel quarry operation approximately 0.8 miles to the southeast of the site, between the PEF and Edmonston Pumping Plant. The nearest residence is about 2.5 miles to the northwest and there is a small cluster of homes about 2.7 miles northwest. The project site is approximately 3 miles directly east of the community of Grapevine. Given the distance to these communities, development of the project would not physically divide or restrict access to these established communities. 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 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 consistency with these plans, policies and regulations in the lands for which the County has jurisdiction. Implementation of the project would require approval of Conditional Use Permit (CUP) No. 9, Map 219, Williamson Act Land Use Contract Cancellation 19-02, and General Plan Amendment (GPA) (Circulation) 10, Map 219 from the Kern County Planning Commission and the Kern County Board of Supervisors and would allow the construction and operation of a 115 megawatt (MW) solar project with up to 80 MW of energy storage capacity.

The project site is zoned A (Exclusive Agriculture). According to Kern County Zoning Ordinances 19.42,030 and 19.44.030, solar energy electrical facilities are permitted within the A districts with approval of a CUP. The project proponent is requesting approval of a CUP to allow for construction and operation of the solar facility within the A zone district. With this discretionary approval, the project would be consistent with the A zoning classifications and would allow for the construction and operation of the 115 MW solar electrical generation facility with the ability to store up to 80 MW in a battery energy storage system (BESS). In addition, as shown in Chapter 3, *Project Description*, Figure 3-4, *Williamson Act Land Use Contract Cancellation*, the project site is currently subject to an existing Williamson Act Land Use Contract Gancellation to facilitate the project. The project also includes a
request for an amendment to the Circulation Element of the Kern County General Plan to eliminate future road reservations along portions of the section lines of Sections 11, 12, 13, and 14, as shown in Chapter 3, *Project Description*, Figure 3-8, *Proposed Amendments to Circulation Element*.

## Kern County General 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, the project is consistent with the goals and policies of the Kern County General Plan.

## Kern County Zoning Ordinance

As described in Section 4.11.2, *Environmental Setting*, the project is subject to the provisions of the Kern County Zoning Ordinance and is included within Kern County Agricultural Preserve Number 19 boundary, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture). As shown in Table 4.11-1, above, and Figure 3-9, *Existing Zoning*, in Chapter 3, *Project Description*, the Kern County Zoning Ordinance designates portions of the project site as being within the A (Exclusive Agriculture) zone district. Pursuant to Section 19.12.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for A (Exclusive Agriculture), subject to a CUP. The project proponent is requesting a CUP to allow for the construction and operation of a 115-MW solar facility within the aforementioned Zoning Districts in Map 219. Because the project's zoning classifications are consistent with current Kern County Zoning Ordinance land use designations which allow solar development with a CUP, the project would be consistent with the its zoning classification with this discretionary approval. As such, with approval of the CUP, the 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 would be required.

## Level of Significance

Impacts would be less than significant.

# **Cumulative Setting, Impacts, and Mitigation Measures**

The geographic scope of analysis for this chapter of the EIR is southern portion of the San Joaquin 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*, Table 3-3, *Cumulative Projects List*, of this EIR, two projects are proposed within the geographic scope, none of which are 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 site would increase the urbanization and result in the loss of agricultural space within the San Joaquin Valley region of Kern County. However, potential land use impacts require evaluation on a case-by-case basis because of the interactive effects of a specific development and its immediate environment. As described in Table 4.11-2, below, the project would be consistent with the goals and policies of the Kern County General Plan. In addition, with approval of the CUP, Williamson Act contract cancellation, and GPA, development of solar facilities for the 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 Zoning Ordinance and would therefore not contribute to a cumulatively considerable impact regarding land use.

Furthermore, all related projects would be required to undergo separate environmental review on a caseby-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 and the Kern County Zoning Ordinance. Should potential impacts be identified, appropriate mitigation would be prescribed that would likely reduce potential impacts to less-thansignificant levels.

In the future, the project could consequently result in the abandonment of the solar panel facilities developed under this project due to 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. Unlike other facilities that, once constructed, can be retrofitted and utilized for another specific use, solar power generation facilities, such as the project, have little opportunity for other uses should the project not be in operation. In an effort to restore the land use character of the project site in the event that solar facilities are no longer viable commercial operations, or at the end of the useful life of the solar facility (which has a tentative life of 35 years), the project would implement Mitigation Measure MM 4.11-1. Mitigation Measure MM 4.11-1 would require the implementation of a Decommission 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.

Based on the above, and with the implementation of Mitigation Measure MM 4.11-1, cumulative land use impacts would be considered less than significant.

## **Mitigation Measures**

MM 4.11-1: Prior to issuance of any building permit, the project proponent shall provide a Decommission Plan for review and approval by the Kern County Engineering, Surveying, and Permit Services Department. The Decommission Plan would be carried out by the proponent or a County-contracted consulting firm(s) at a cost to be borne by the project proponent. 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. The repurposing, resale and salvage value of all personal property, including the solar panels and support structures, and real property interests, if any, held by the project proponent on the date of original valuation and as adjusted annually by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s), as described below, shall be included in the financial assurance calculations. The assumption, when preparing the estimate, is that the project operator is incapable of performing the work or has abandoned the solar facility, thereby requiring Kern County to hire an independent contractor to perform the decommissioning work. In addition to submitting a Decommission Plan, the project operator shall post or establish and maintain financial assurances with Kern County related to the deconstruction of the site as identified in the approved Decommission Plan in the event that at any point in time the project operator determines it is not in the company's best interest to operate the facility.

The financial assurance required prior to issuance of any building permit shall be established using one of the following:

- a. An irrevocable letter of credit;
- b. A surety bond;
- c. A trust fund in accordance with the approved financial assurances to guarantee the deconstruction work will be completed in accordance with the approved decommission plan; or
- d. Other financial assurances as reviewed and approved by the respective County administrative offices, in consultation with the Kern County Planning and Natural Resources Department.

The financial institution or Surety Company shall give the County at least 30 days' notice of intent to terminate the letter of credit or bond. Financial assurances shall be reviewed every 5 years by the Kern County Engineering, Surveying, and Permit Services Department or County contracted consulting firm(s) at a cost to be borne by the project operator to substantiate that adequate funds exist to ensure deconstruction of all solar panels and support structures identified on the approved Decommission Plan. Should the project operator deconstruct the site on their own, the County will not pursue forfeiture of the financial assurance.

Once deconstruction has occurred, financial assurance will no longer be required and any financial assurance posted shall be adjusted or returned accordingly. Any funds not utilized through decommission of the site by the County shall be returned to the project operator.

Should the solar field not be in operational condition for a consecutive period of 24 months due to reasons within the sole and reasonable control of the project owner, the site shall be deemed abandoned and shall be removed within 60 days from the date a written notice is sent to the property owner and solar field owner, as well as the project operator, by the County. Within this 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 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 after notice to the owner and a written determination by the Kern County Planning and Natural Resources Director be permitted to remain in place for more than 48 months from the date, the solar facility was first deemed abandoned by written determination by the Kern County Planning and Natural Resources Director.

## Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.11-1, cumulative impacts would be less than significant.

## Project Consistency with the Kern County General Plan

**Table 4.11-2**, *Consistency Analysis with Kern County General Plan Policies for Land Use*, 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.

Goals and Policies	Consistency Determination	Project Consistency		
CHAPTER 1, LA	CHAPTER 1, LAND USE, OPEN SPACE, AND CONSERVATION ELEMENT			
1.3 Physical and Environmental Constraints				
Goal 1: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous.	Consistent with implementation of Mitigation Measure MM 4.7-1 and MM 4.10-1	Consistent with this policy, the project would develop a solar PV power generating facility that is not located on a hazardous site. See Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR. However, the project site is designated as 8.1/2.5 (Intensive Agriculture [Min 20 Acres]/Flood Hazard), 8.3/2.5 (Extensive Agriculture [Min 20 Acres]/Flood Hazard), and 8.4/2.5 (Mineral and Petroleum/ Flood Hazard). As described in Section 4.7, <i>Geology and Soils</i> , of this EIR, the project site is not transected by a known active or potentially active fault and is not located within a State of California Alquist-Priolo Earthquake Fault Zone. In addition, construction of the project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Adherence to all applicable regulations would mitigate any potential impacts associated with fault rupture adjacent to the project site. Based on the absence of any known active faults that cross, or are located in close proximity to, the project site and project compliance with applicable ordinances of the Kern County Building Code, the potential impact of fault rupture would be less than significant. Additionally, Mitigation Measure MM 4.7-1 would require implementation of recommendations from the Geotechnical Engineering Report for the project, which would ensure site stability to the maximum extent possible during project construction and operation. As described in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, the project facilities to have 1 foot of freeboard clearance above the calculated maximum flood depths for the solar arrays or the finished floor of any permanent structures and grading for the project would be designed so that water surface elevations during flood events would not be increased by more than 1 foot. Further, the project would be developed in accordance with the Kern County General Plan and Floodplain Management Ordinance. Final review of the project by the Kern County Planning and Natural Resources Departmen		

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 1:</b> 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 to 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, <i>Physical and Environmental Constraints</i> , Goal 1, of the Kern County General Plan, above.
<b>Policy 3:</b> Zoning and other land use controls will be used to regulate, and prohibit, if necessary, future development when physical hazards exist.	Consistent	Hazards and hazardous materials impacts are evaluated in Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR. Consistent with this policy, the project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.
<b>Policy 8:</b> Encourage the preservation of the floodplain's flow conveyance capacity, especially in floodways, to be open space/passive recreation areas throughout the County.	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. As described therein, project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the project would be consistent with this policy.
<b>Policy 9:</b> Construction of structures that impede water flow in a primary floodplain will be discouraged.	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. As described therein, project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the project would be consistent with this policy.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 10:</b> The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element (Chapter 4) of this General Plan.	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. As described therein, the project would not substantially increase the potential for flooding beyond existing conditions. Flooding in this location would not result in a safety hazard, as the project would not establish a substantial permanent population onsite. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and would implement Mitigation Measure MM 4.10-1, as described above. Therefore, the project would be consistent with this policy.
<b>Policy 11:</b> Protect and maintain watershed integrity within Kern County.	Consistent with implementation of Mitigation Measure MM 4.9-1	As discussed in Section 4.10, <i>Hydrology and Water Quality</i> , the project would implement best management practices during construction to avoid impacts to water quality. The project would also implement Mitigation Measure MM 4.9-1, which would require the project proponent to provide a Hazardous Materials Business Plan, as described in Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR, to reduce mixing of pollutants with stormwater onsite, thereby maintaining the integrity of the watershed.
<b>Measure D:</b> 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 4.7-3 and MM 4.10-1	The project would implement Mitigation Measures MM 4.7-3 and MM 4.10-1. As discussed in Section 4.7, <i>Geology and Soils</i> , grading would be subject to compliance with the Kern County National Pollutant Discharge Elimination System (NPDES) and the implementation of required Best Management Practices (BMPs) would minimize the potential for erosion or loss of topsoil. Since project construction would disturb over an acre of ground, the project operator would conform to the requirements of NPDES General Construction Permit Program through the preparation of a Stormwater Pollution Prevention Plan (SWPPP), including erosion control and sediment control BMPs designed to prevent disturbed soils from moving offsite. Implementation of Mitigation Measure MM 4.7-3 would incorporate BMPs consistent with the Kern County NPDES General Construction Permit Program and would require the project proponent to prepare an Erosion and Sedimentation Control Plan as well as a SWPPP. The project would also 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. The project would also be required to implement a drainage plan that would minimize the potential for changes in onsite drainage plan that could increase erosion and sedimentation (see Section 4.10, <i>Hydrology and Water</i> )

	Consistency	
Goals and Policies	Determination	Project Consistency
		<i>Quality</i> , of this EIR for more details). A grading permit would be obtained from the County prior to commencement of construction activities. According to Chapter 17.28 of the Kern County Grading Ordinance, this includes submittal of grading plans to the County for review prior to issuance of a grading permit and grading activities on the project site. County review of grading plans would ensure that appropriate erosion control measures have been implemented on site. Therefore, the project would be consistent with this measure.
<b>Measure F:</b> The County will comply with the Colbey- Alquist Floodplain Management Act in regulating land use within designated floodways.	Consistent with implementation of Mitigation Measure MM 4.10-1	See Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. The project facilities would be designed to maintain clearance above the maximum flood depths and grading would not substantially increase flooding depths. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the project would be consistent with this measure.
<b>Measure H:</b> Development within areas subject to flooding, as defined by the appropriate agency, will require necessary flood evaluations and studies.	Consistent with implementation of Mitigation Measure MM 4.10-1	As described in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1. Therefore, the project would be consistent with this measure. In addition, according to the scour analysis performed for the project, as discussed further in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, when subjected to flood flows, each foundation post has the potential to create local scour in the same manner as a bridge pier located in a stream. This pier scour approach, while very conservative, found that total scour depths would range from no scour up to 4-5 feet at just 31 of 69,000 panel posts. Long-term degradation is not expected because no long-term project changes to the hydrology or flow discharge locations are anticipated within the design life of the project.
<b>Measure J:</b> Compliance with the Floodplain Management Ordinance prior to grading or improvement of land for development or the construction, expansion, conversion or substantial improvements of a structure is required.	Consistent with implementation of Mitigation Measure MM 4.10-1	See 1.3, <i>Physical and Environmental Constraints</i> , Measure H, of the Kern County General Plan, above.

Goals and Policies	Consistency Determination	Project Consistency
<b>Measure N:</b> 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 4.7-3	Section 4.10, <i>Hydrology and Water Quality</i> , discusses impacts related to soil- disturbing activities and required compliance with Kern County's NPDES applicability regulation, which requires projects to comply with the State Water Resources Control Board's Construction General Permit. In addition, as discussed in Section 4.7, <i>Geology and Soils</i> , of this EIR, grading would be subject to compliance with the Kern County NPDES and the implementation of required BMPs would minimize the potential for erosion or loss of topsoil. Since project construction would disturb over an acre of ground, the project operator would conform to the requirements of NPDES General Construction Permit Program through the preparation of a SWPPP, including erosion control and sediment control BMPs designed to prevent disturbed soils from moving offsite. Implementation of Mitigation Measure MM 4.7-3 would incorporate BMPs consistent with the Kern County NPDES General Construction Permit Program and would require the project proponent to prepare an Erosion and Sedimentation Control Plan as well as a SWPPP.
1.4 Public Facilities and Services		
<b>Goal 1:</b> Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.	Consistent with implementation of Mitigation Measure MM 4.14-2	As discussed in Section 4.14, <i>Public Services</i> , of this EIR, implementation of Mitigation Measure MM 4.14-2 would require the project to pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facilities in order to mitigate any potential impacts to fire or police protection services resulting from the project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural Resources Department, any additional fire or law enforcement protection services, facilities or personnel required as a result of the project would be appropriately funded.

 TABLE 4.11-2:
 CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

Goals and Policies	Consistency Determination	Project Consistency
<b>Goal 5:</b> 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, <i>Utilities and Service Systems</i> , of this EIR. An analysis of water supplies available to serve the project is provided therein. A project-specific Water Supply Assessment was prepared for this analysis. Based on estimated project construction and operational water demands, the commitment from Tejon-Castac Water District to supply the project with water with State Water Project water, and data supporting the availability of State Water Project water, there is sufficient water available to meet the future water demands of the project during normal, single dry, and multiple dry years through the life of the project and impacts related to water supply would be less than significant. As such, there would be sufficient water supply for other uses in Kern County.
<b>Policy 1:</b> New discretionary development will be required to pay its proportional share of the local costs of infrastructure improvements required to service such development.	Consistent with implementation of Mitigation Measure MM 4.14-2	The project would construct and operate a 115 megawatt (MW) solar facility with up to 80 MW of battery energy storage. The project consists of a 220 kV gen-tie line would extend from the onsite substation due east for 0.5 miles to connect with the substation at the PEF. From this point, power would be transmitted to the SCE grid at the Pastoria Substation through an existing line. The project's gen-tie line would cross under the existing transmission corridor that is between the project site and the PEF. This infrastructure improvement would be fully funded by the project proponent. No further improvements are anticipated as a part of the project. However, should improvements be made, the project proponent would coordinate with the County to ensure that the cost of the infrastructure improvement is properly funded. Additionally, implementation of Mitigation Measure MM 4.14-2 would require the project to pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facilities in order to mitigate any potential impacts to fire or police protection services resulting from the project.
<b>Policy 3:</b> Individual projects will provide availability of public utility service as per approved guidelines of the serving utility.	Consistent with implementation of Mitigation Measure MM 4.17-1	Public utility impacts are evaluated in Section 4.17, <i>Utilities and</i> <i>Service Systems</i> . As described therein, the project would have less-than- significant impacts on water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. With the implementation of Mitigation Measure MM 4.17-1, a recycling coordinator would ensure the separation and proper disposal of recyclable materials and solid waste during construction and operation, resulting in a less-than- significant impact to solid waste providers.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 6:</b> 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.
<b>Policy 7:</b> 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.
<b>Measure B:</b> Determine local costs of County facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the site of approval of the Final Map. This implementation can be effectuated by the formation of a County work group.	Consistent with implementation of Mitigation Measure MM 4.14-2	See 1.4, <i>Public Services and Facilities</i> , Goal 1, above.
<b>Measure C:</b> Project developers shall coordinate with the local utility service providers to supply adequate public utility services.	Consistent	Project effects related to utilities are discussed in Section 4.17, <i>Utilities and Service Systems</i> , of this EIR. The project would result in less-than-significant impacts to utilities and service systems. Furthermore, the project would include the development of a solar PV power generating facility designed to produce approximately 115 MW of solar power that would be delivered to the grid, reducing dependence on fossil fuel-based energy.
<b>Measure D:</b> Involve utility providers in the land use and zoning review process.	Consistent	See 1.4, <i>Public Services and Facilities</i> , Policy 3, above. In addition, as described in Chapter 2, <i>Introduction</i> , of this EIR, CEQA requires lead agencies, in this case Kern County, to solicit and consider input from other interested agencies, citizen groups, and individual members of the public, including utility providers.

Goals and Policies	Consistency Determination	Project Consistency
<b>Measure L:</b> 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, <i>Public Services</i> , of this EIR. Mitigation Measure MM 4.14-1 requires implementation of a fire safety plan during project construction and operation that would include notification procedures and emergency fire precautions to help reduce fire risks and the consequential need for fire protection services onsite. Mitigation Measure MM 4.14-2 requires the project proponent to pay applicable fees and taxes to reduce significant impacts to fire or police protection services resulting from the project. Therefore, the project would not substantially increase the need for new fire department staff or new facilities and impacts related to fire protection services would be less than significant. Thus, new or physically altered Kern County Fire Department facilities would not be required to accommodate the project.
1.9 Resources		
<b>Goal 1:</b> To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.	Consistent	The project site is located on land that is zoned as A (Exclusive Agriculture) and implementation of the project would preclude livestock grazing on the site. Other uses besides agriculture, including solar energy generation and storage, are permitted within the A District with the approval of a CUP. The project would not involve additional changes 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 650 acres. Additionally, discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, while the project site is partially within the General Plan designation of 8.4 (Mineral and Petroleum), the project site not located within the NR (Natural Resources) or PE (Petroleum Extraction) zoned districts. Installation of solar panels on the site would not impede access to mineral resources or potential mineral operations in adjacent areas. The project would not interfere with current oil and mineral extraction operations, and would not result in the loss of land designated for mineral resources. Furthermore, the installation of photovoltaic panels and gen-tie line would not preclude future onsite mineral resources in the future. Therefore, the project would be consistent with this goal.

Goals and Policies	Consistency Determination	Project Consistency
Goal 2: Protect areas of important mineral, petroleum, and agricultural resource potential for future use.	Consistent	See 1.9, <i>Resource</i> , Goal 1, above. As discussed in Section 4.12, <i>Mineral Resources</i> , of the EIR, the project site where the solar arrays would be developed is not designated as a mineral recovery area by the Kern County General Plan, nor is it identified as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. However, a portion of the project site, the gen-tie line, is designated as a mineral recovery area by the Kern County General Plan and as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. However, a portion of the project site, the gen-tie line, is designated as a mineral recovery area by the Kern County General Plan and as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. The project site is partially within the General Plan designation of 8.4 (Mineral and Petroleum), and is not located within the NR (Natural Resources) or PE (Petroleum Extraction) zoned districts. In addition, Installation of solar panels on the site would not impede access to mineral resources or potential mineral operations in adjacent areas. The project would not interfere with current oil and mineral extraction operations, and would not result in the loss of land designated for mineral resources.
<b>Goal 3:</b> Ensure the development of resource areas minimize effects on neighboring resource lands.	Consistent	The solar facilities are compatible with open space, wind energy, and other resource management land uses. Furthermore, the placement of solar arrays at the project site may deter other urban and suburban land uses from being developed nearby. The project would not preclude the existing nearby agricultural, mineral, and petroleum extraction uses from operating.
<b>Goal 4:</b> Encourage safe and orderly energy development within the County, including research and demonstration projects, and to become actively involved in the decision and actions of other agencies as they affect energy development in Kern County.	Consistent	The project would develop a solar PV power generating facilities designed to produce approximately 115 MW of solar power and to store up to 80 MW of battery energy storage. The location of the site would ensure a safe and orderly development of the solar facilities. Additionally, the NOP of this EIR was sent to state and federal agencies requesting their input to ensure that appropriate information about the project site were being gathered. Similarly, this EIR will also be circulated to these agencies, and staff will have the opportunity to comment on the environmental analyses. Therefore, the County is complying with this goal for the project.

Goals and Policies	Consistency Determination	Project Consistency
<b>Goal 5:</b> Conserve prime agricultural lands from premature conversion	Consistent	As discussed in Section 4.2, <i>Agriculture and Forestry Resources</i> , 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 project. In addition, while the project site is currently under a Williamson Act contract, the land owner petitioned for cancellation of the Williamson Act contract in 2014, pursuant to California Government Code Section 51282(a)(1), which pertains to cancellation of a Williamson Act in the public interest. As described further in Section 4.2, <i>Agriculture and Forestry Resources</i> , benefits from cancellation of the Williamson Act contract, the objectives of the Williamson Act. With approval of the cancellation of the Williamson Act contract, the project would not conflict with this goal.
<b>Goal 6:</b> Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.	Consistent	Consistent with this policy, the project is the development of a solar PV power generating facilities designed to produce approximately 115 MW of solar power. The project would develop a clean energy source that would create fewer fossil fuel emissions; thus, protecting the environment.
<b>Policy 1:</b> Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.	Consistent	Impacts on natural resources are avoided or minimized through the design of the project and would not affect long term use of the site. The project implements the Kern County General Plan policy of maximizing utilization of available solar resources.
<b>Policy 7:</b> Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.	Consistent	See 1.9, <i>Resource</i> , Goal 5, of the Kern County General Plan, above.

Goals and Policies	Consistency Determination	Project Consistency
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 Measures MM 4.7-4 and MM 4.10-1	As discussed in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, the project would be required to adhere to the Kern County Development Standards and Kern County Code of Building Regulations which require site drainage plans that include development standards designed to protect water quality. Specifically, the project proponent would be required to prepare and submit a drainage plan to the Kern County Public Works Department, for approval of post-construction structural and nonstructural BMPs that could include Low Impact Development (LID) features such as drainage swales for collection of runoff prior to offsite discharge. Routine structural BMPs are intended to address water quality impacts related to drainage that are inherent in development. Consistent with this policy, the 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. In addition, as discussed in Section 4.7, <i>Geology and Soils</i> , of this EIR, the project to submit grading plans accompanied by a soils engineering report, engineering geology report, and drainage calculations pursuant to the Kern County Grading Code (Section 17.28.070) to the Kern County Engineering and Survey Services Department in order to obtain required grading permits. Compliance with Mitigation Measure MM 4.7-4 would ensure that excessive grading does not occur. Therefore, with implementation of these mitigation measures, the project would be consistent with this goal to minimize the alternation of natural drainage areas. Furthermore, as noted in Section 4.4, <i>Biological Resources</i> , the gen-tie poles installed under the project would avoid the three drainages identified as existing on the project site, including a 25-foot buffer.
<b>Policy 12:</b> Areas identified by the Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service) as having high range-site value should be conserved for Extensive Agriculture uses or as Resource Reserve, if located within a County water district.	Consistent	See 1.9, <i>Resource</i> , Goal 5, of the Kern County General Plan, above.

TABLE 4.11-2:         CONSISTENCY ANAL	YSIS WITH KERN COUNTY	GENERAL PLAN FOR LAND USE
--	-----------------------	---------------------------

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 14:</b> Emphasize conservation and development of identified mineral deposits.	Consistent	As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, there are six plugged oil and gas wells located on the project site. These wells have been classified by CalGEM as dry hole wells, which are defined as wells that have not encountered hydrocarbons in economically producible quantities (Schlumberger, 2020). Consistent with this policy, no development would occur that would impact identified mineral deposits.
<b>Policy 17:</b> Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.	Consistent	As discussed in Section 4.12, <i>Mineral Resources</i> , of this EIR, the project site where the solar arrays would be developed is not designated as a mineral recovery area by the Kern County General Plan, nor is it identified as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. However, a portion of the project site, the gen-tie line, is designated as a mineral recovery area by the Kern County General Plan and as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. In addition, the project site is not located within the NR (Natural Resources) or PE (Petroleum Extraction) zoned districts; however, the project site is partially within the General Plan designation of 8.4 (Mineral and Petroleum). Areas immediately surrounding the project site are also not classified as MRZs. As analyzed in Section 4.12, <i>Mineral Resources</i> , of this EIR, given the characteristics of the project type of location, the project would not interfere with nearby mineral extraction operations and would not result in the loss of land designated for mineral resources. As such, no lands classified as MRZ-2 would be encroached upon from incompatible land uses.
<b>Policy 25:</b> Discourage incompatible land use adjacent to Map Code 8.4 Mineral and Petroleum areas.	Consistent	See 1.9, <i>Resource</i> , Policy 14, of the Kern County General Plan, above.
<b>Measure B:</b> Areas designated as Resource Reserve (Map Code 8.2), Extensive Agriculture (Map Code 8.3), Resource Management (Map Code 8.5) that are under Williamson Act Contracts or Farmland Security Zone Contracts will have a minimum parcel size of 80 acres until such time as a contract is expired or is cancelled, at which time the minimum parcel size will become 20 acres.	Consistent	The project site is on approximately 650 acres of privately owned land in unincorporated portions of Kern County. While the project site is currently under a Williamson Act contract, the land owner has petitioned for cancellation of the Williamson Act contract, pursuant to California Government Code Section 51282(a)(1), which pertains to cancellation of a Williamson Act in the public interest. With the cancellation of the Williamson Act contract, the project site would continue to be 650 acres and individual parcel sizes would continue to exceed 80 acres. Therefore, the project would be consistent with the minimize acreage sizes specified under this measure.

Goals and Policies	Consistency Determination	Project Consistency
<b>Measure F:</b> Prime agricultural lands, according to the Kern County Interim-Important Farmland 2000 map produced by the Department of Conservation, which have Class I or II soils and a surface delivery water system shall be conserved through the use of agricultural zoning with minimum parcel size provisions.	Consistent	As discussed in Section 4.2, <i>Agriculture and Forestry Resources</i> , of this EIR, the project site 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 project.
<b>Measure G:</b> Property placed under the Williamson Act/Farmland Security Zone Contract must be in a Resource designation.	Consistent	As discussed in Section 4.2, <i>Agriculture and Forestry Resources</i> , while the project site is currently under a Williamson Act contract, the land owner has petitioned for cancellation of the Williamson Act contract, pursuant to California Government Code Section 51282(a)(1), which pertains to cancellation of a Williamson Act in the public interest. Therefore, with approval of the cancellation of the Williamson Act contract, the project would not conflict with this measure.
<b>Measure H:</b> Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.	Consistent	See 1.9, <i>Resource</i> , Policy 14, of the Kern County General Plan, above.
<b>Measure K:</b> Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction).	Consistent	The Kern County Zoning Ordinance designates the project site as being within the A (Exclusive Agriculture) zone district. The project site is included within Kern County Agricultural Preserve Number 19 boundary, as is the standard practice in Kern County for any land that is zoned A (Exclusive Agriculture). Pursuant to Section 19.12.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for A (Exclusive Agriculture) Exclusive Agriculture subject to a CUP. The project proponent is requesting a CUP to allow for the construction and operation of a 115 MW solar facility within the aforementioned Zoning Districts in Map 219. Because the project's zoning classifications are consistent with current Kern County Zoning Ordinance land use designations which allow solar development with a CUP, the project would be consistent with the its zoning classification with this discretionary approval. As such, with approval of the CUP, the project would be consistent with applicable land use policies and regulations. Additionally, the project would not be located in an active oilfield or mineral extraction area.

Goals and Policies	Consistency Determination	Project Consistency
1.10 General Provisions		
<b>Goal 1:</b> Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.	Consistent	Consistent with this policy, the project would develop a solar PV power generating facilities that are not located on a hazardous site. The project would develop a clean energy source that reduce fossil fuel emissions; thereby reducing GHG emissions, preserving natural resources, and promoting a safe and healthful environment.
1.10.1 Public Services and Facilities		
<b>Policy 9:</b> New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure which it generates and upon which it is dependent.	Consistent with implementation of Mitigation Measure MM 4.14-2	See 1.4, <i>Public Facilities and Services</i> , Goal 1, above. Impacts to public services are evaluated in Section 4.14, <i>Public Services</i> , of this EIR.
<b>Policy 15:</b> Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the CEQA documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.	Consistent with implementation of Mitigation Measure MM 4.17-1	See 1.4, Public Services and Facilities, Policy 3, above.
<b>Policy 16:</b> The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to serve the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.	Consistent	See 1.4, <i>Public Facilities and Services</i> , Goal 1 and Policy 1, above.
<b>Measure C:</b> 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.
<b>Measure D:</b> Involve utility providers in the land use and zoning review process.	Consistent	See 1.4, Public Facilities and Services, Policy 3, above.

fugitive dust control measures; preparation of a Phased Grading Plan which minimizes grading, dust palliatives, and water suppression; a Revegetation Plan; construction equipment measures; and wind erosion reduction measures.

Goals and Policies	Consistency Determination	Project Consistency
<b>Measure E:</b> All new discretionary development projects shall be subject to the Standards for Sewage, Water Supply and Preservation of Environmental Health Rules and Regulations administered by the County's Public Health Services Department. Those projects having percolation rates of less than five minutes per inch shall provide a preliminary soils study and site specific documentation that characterize the quality of upper groundwater in the alternative septic systems would adversely impact groundwater quality. If the evaluation indicated that the uppermost groundwater at the proposed site already exceeds groundwater quality objectives of the Regional Water Quality Control Board or would if the alternative septic system is installed, the applicant would be required to supply sewage collection, treatment, and disposal facilities.	Consistent	Water and wastewater impacts are evaluated in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. The project would not require new wastewater disposal systems to be constructed, as there would be no permanent employees on the project site; therefore, no septic tanks or permanent toilets would be required and no permanent water source would be necessary. Final review of the 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 project would not pose significant environmental or public health and safety hazards.
1.10.2 Air Quality		
<b>Policy 18:</b> 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 4.3-10	Air quality and GHG emissions impacts are evaluated in Sections 4.3, <i>Air Quality</i> , and 4.8, <i>Greenhouse Gas Emissions</i> , of this EIR. Consistent with this policy, the project would have less-than-significant project-level impacts on air quality emissions with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-10 and less than significant impacts related to GHG emissions. However, cumulative air quality impacts during construction of the project would be significant and unavoidable. Air quality mitigation measures include

TABLE 4.11-2: CONS	SISTENCY ANALYSIS WITH	KERN COUNTY GENERAL	L PLAN FOR LAND USE
--------------------	------------------------	---------------------	---------------------

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 19:</b> In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:	Consistent	See 1.10.2, <i>Air Quality</i> , Policy 18, above. This EIR serves to comply with this policy.
(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.		
<b>Policy 20:</b> The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.	Consistent with implementation of Mitigation Measures MM 4.3 1 through MM 4.3-9	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. As discussed therein, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9 would further reduce fugitive dust emissions during construction and operation, in compliance with the adopted rules and regulations of the San Joaquin Valley Air Pollution Control District on ministerial permits.
<b>Policy 21:</b> 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 through MM 4.3-9	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. As discussed in that section, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9 would further reduce $PM_{10}$ and $PM_{2.5}$ emissions during construction and operation.
<b>Policy 22:</b> 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 4.3-10	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this policy, the project would have less-than-significant impacts on air quality with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-10 and less than significant impacts related to GHG emissions. However, cumulative air quality impacts during construction of the project would be significant and unavoidable. The project would be in compliance with all applicable San Joaquin Valley Air Pollution Control District rules and regulations.

Goals and Policies	Consistency Determination	Project Consistency
<b>Measure F:</b> All discretionary permits shall be referred to the appropriate air district for review and comment.	Consistent	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this measure, the necessary discretionary permits shall be referred to the San Joaquin Valley Air Pollution Control District for review and comment.
<ul> <li>Measure G: Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:</li> <li>a. Minimizing idling time.</li> <li>b. Electrical overnight plug-ins.</li> </ul>	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-10	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this measure, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-10 would require diesel exhaust reduction strategies.
<ul> <li>Measure H: Discretionary projects may use one or more of the following to reduce air quality effects:</li> <li>a. Pave dirt roads within the development.</li> <li>b. Pave outside storage areas.</li> <li>c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.</li> <li>d. Use of alternative fuel fleet vehicles or hybrid vehicles.</li> <li>e. Use of emission control devices on diesel equipment.</li> <li>f. Develop residential neighborhoods without fireplaces or with the use of Environmental Protection Agency certified, low emission natural gas fireplaces.</li> <li>g. Provide bicycle lockers and shower facilities on site.</li> <li>h. Increasing the amount of landscaping beyond what is required in the Zoning Ordinance (Chapter 19.86).</li> <li>i. The use and development of park and ride facilities in outlying areas.</li> <li>j. Other strategies that may be recommended by the local Air Pollution Control Districts.</li> </ul>	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-10	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. Consistent with this measure, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-10 would further reduce adverse air quality effects.

Goals and Policies	Consistency Determination	Project Consistency
<b>Measure J:</b> The County should include PM <sub>10</sub> control measures as conditions of approval for subdivision maps, site plans, and grading permits.	Consistent with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9	Air quality impacts are evaluated in Section 4.3, <i>Air Quality</i> , of this EIR. As discussed in that section, implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9 would further reduce $PM_{10}$ and $PM_{2.5}$ emissions during construction and operation.
1.10.3 Archaeological, Paleontological, Cultural, and	nd Historical Preserva	tion
<b>Policy 25:</b> The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.	Consistent with implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. This EIR serves to comply with this policy and includes Mitigation Measures MM 4.5-1 through MM 4.5-4 to promote the preservation of cultural and historic resources where necessary.
<b>Measure K:</b> Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.	Consistent Mitigation Measures MM 4.5-2	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. As part of the cultural resources analysis, a cultural resources records search was conducted by staff at the Southern San Joaquin Valley Information Center at California State University, Bakersfield. Consistent with this measure, copies of reports will be provided to the Kern County Planning and Natural Resources Department and to the Southern San Joaquin Valley Information Center at California State University, Bakersfield, per Mitigation Measure MM 4.5-2.
<b>Measure L:</b> 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, <i>Cultural Resources</i> , of this EIR. Consistent with this measure, impacts to archaeological and historical resources are evaluated in accordance with CEQA. This EIR serves to comply with this policy.
<b>Measure M:</b> In areas of known paleontological resources, the County should address the preservation of these resources where feasible.	Consistent with implementation of Mitigation Measures MM 4.7-5 through MM 4.7-7	Paleontological resource impacts are evaluated in Section 4.7, <i>Geology and Soils</i> , of this EIR. Mitigation Measures MM 4.7-5 through MM 4.7-7 which would reduce potential impacts to known paleontological resources through hiring a qualified paleontologist shall be retained to monitor all ground-disturbing activity, document, and implement measures as needed. These mitigation measures would address the preservation of paleontological resources.

Goals and Policies	Consistency Determination	Project Consistency
<b>Measure N:</b> The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.	Consistent	Tribal cultural resource impacts are evaluated in Section 4.16, <i>Tribal Cultural Resources</i> . Consistent with this measure, notification regarding the project would be accomplished in accordance with the established procedures for discretionary projects and CEQA documents.
<b>Measure O:</b> On a project-specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.	Consistent with implementation of Mitigation Measure MM 4.5-1	Cultural resource impacts are evaluated in Section 4.5, <i>Cultural Resources</i> , of this EIR. This EIR serves to comply with this measure and includes Mitigation Measure MM 4.5-1, which would require consultation with the Native American monitor(s) to conduct a Cultural Resources Sensitivity Training for all personnel working on the project.
1.10.5 Threatened and Endangered Species		
<b>Goal 1:</b> Ensure that the County can accommodate anticipated future growth and development while a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13, MM 4.10-1, and MM 4.14-2	As discussed in Section 4.4, <i>Biological Resources</i> , of this EIR, the project would potentially impact special-status plant and wildlife species. In an effort to preserve these valuable natural resources, the project would implement Mitigation Measure MM 4.4-1 through MM 4.4-13. Jurisdictional waters would also be preserved with implementation of Mitigation Measure MM 4.4-11 and MM 4.4-12. As described in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, the project site is located within the 100-year floodplain and is classified as having a 1 percent annual chance of flooding. Further, the project would be developed in accordance with the Kern County General Plan, Floodplain Management Ordinance and Mitigation Measure MM 4.10-1.
		As discussed in Section 4.14, <i>Public Services</i> , of this EIR, implementation of Mitigation Measure MM 4.14-2 would require the project to pay a fee assigned by the Kern County Planning and Natural Resources Department over the life of the proposed facilities in order to mitigate any potential impacts to fire or police protection services resulting from the project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural Resources Department, any additional fire or police protection services, facilities or personnel required as a result of the project would be appropriately funded. Therefore, the project would be consistent with this measure.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 27:</b> Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. This EIR serves to comply with this policy and reduce potential impacts with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13. Additionally, the project would be developed and operated in accordance with all local, state and federal laws pertaining to the preservation of sensitive species.
<b>Policy 28:</b> County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13	Biological Resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. This EIR serves to comply with this policy and reduce potential impacts with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 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.
<b>Policy 29:</b> The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.	Consistent with implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. Implementation of Mitigation Measures MM 4.4-1 through MM 4.4-13 would increase cooperative efforts with local, State, and federal agencies to support threatened and endangered plant and wildlife. In addition, there is no adopted habitat conservation plan, natural community conservation plan or other approved local, regional, or state habitat conservation plan protecting biological resources on the project site.
<b>Policy 31:</b> Under the provisions of the California Environmental Quality Act, the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document is prepared.	Consistent	See 1.10.5, <i>Threatened and Endangered Species</i> , Policy 28, above.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 32:</b> 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 4.4-12	Biological resource impacts and impacts to riparian areas, are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. As discussed therein, sensitive natural communities and riparian habitats are absent from the project site. However, two ephemeral drainages were identified along the gen-tie portion of the project site and one drainage ditch, one dormant channel, and three upland swales were identified within the solar array portion of the project site. These drainages are potentially subject to Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) jurisdiction with the exception of the three upland swales. Because the features identified all drain to inland areas of California and are non-navigable, isolated waterways, the USACE is not expected to assert jurisdiction over the features. Consistent with this County policy, Mitigation Measure MM 4.4-12 would require consultation with CDFW. The County will respond to all comments from reviewing agencies during the CEQA process.
<b>Measure Q:</b> Discretionary projects shall consider effects to biological resources as required by CEQA.	Consistent	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. Consistent with this measure, the evaluation of impacts to biological resources was performed in accordance with CEQA.
<b>Measure R:</b> Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA.	Consistent with implementation of Mitigation Measures MM 4.4-1, MM 4.4-4 through MM 4.4-10, MM 4.4-12, and MM 4.4-13	Biological resource impacts are evaluated in Section 4.4, <i>Biological Resources</i> , of this EIR. Consistent with this measure, the project would implement mitigation measures that require consultation with the resource agencies, including Mitigation Measures MM 4.4-1, MM 4.4-4 through MM 4.4-10, MM 4.4-12, and MM 4.4-13. The County has and will respond to all comments from reviewing agencies during the CEQA process.

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 4.7-3 and MM 4.10-1	Water quality impacts are evaluated in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR. Consistent with this policy, the 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. In addition, per Mitigation Measure MM 4.7-3 in Section 4.7, <i>Geology and Soils</i> , of this EIR, the project would be required to implement a SWPPP, which 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 subsequent degradation of stormwater.
<b>Policy 41:</b> Review development proposals to ensure adequate water is available to accommodate projected growth.	Consistent	Section 4.17, <i>Utilities and Service Systems</i> , of this EIR, provides an analysis of water supplies available to serve the project. A project-specific Water Supply Assessment was prepared for this analysis. Based on estimated project construction and operational water demands, the commitment from Tejon-Castac Water District to supply the project with water with State Water Project water, and data supporting the availability of State Water Project water, there is sufficient water available to meet the future water demands of the project during normal, single dry, and multiple dry years through the life of the project.
<b>Policy 43:</b> Drainage shall conform to the Kern County Development Standards and the Grading Ordinance.	Consistent with implementation of Mitigation Measure MM 4.10-1	See 1.9, <i>Resources</i> , Policy 11, above.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 44:</b> Discretionary projects shall analyze watershed impacts and mitigate for construction- related and urban pollutants, as well as alterations of flow patterns and introduction of impervious surfaces as required by the California Environmental Quality Act (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, <i>Hydrology and Water Quality</i> , of this EIR, discusses impacts and mitigation for potential impacts to the watershed during construction from pollutants, alteration of flow patterns, and changes in impervious surfaces. Consistent with this policy, construction-related impacts related to alteration of flow patterns and impervious surfaces would be less than significant.
Measure Y: Promote efficient water use by utilizing measures such as: (i) Requiring water-conserving design and equipment in new construction; (ii) Encouraging water-conserving landscaping and irrigation methods; and (iii) Encouraging the retrofitting of existing development with water conserving devices.	Consistent	See 1.4, Public Facilities and Services, Goal 5, above.
1.10.7 Light and Glare		
<b>Policy 47:</b> Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.	Consistent with implementation of Mitigation Measures MM 4.1-4 through MM 4.1-6	Aesthetic impacts are evaluated in Section 4.1, <i>Aesthetics</i> , of this EIR. During construction, lighting would be limited during non-daylight hours and would be used in such a way that minimal illumination would be provided. Construction would temporarily and minimally increase glare conditions. Operational lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives. Lighting during construction and operation would be directed downwards and shielded to focus illumination and to minimize light trespass. Glare conditions would increase during operation with the addition of the solar modules across the project site and with the addition of the energy storage facility and collector substation. Mitigation Measure MM 4.1-4 would require compliance with the Dark Skies Ordinance (Chapter 19.81 of the Kern County Zoning Ordinance) and would result in the minimum illumination needed to achieve safety and security objectives. Mitigation Measure MM 4.1-5 would require that solar panels and hardware are designed to minimize glare and spectral highlighting. Finally, Mitigation Measure MM 4.1-6 would require that all onsite buildings utilize non-reflective materials. With implementation of Mitigation Measures MM 4.1-4 through

MM 4.1-6, impacts related to light and glare would be less than significant.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 48:</b> Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.	Consistent with implementation of Mitigation Measures MM 4.1-4 through MM 4.1-6	See 1.10.7, Light and Glare, Policy 47, above.
<b>Measure AA:</b> 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 4.1-4 through MM 4.1-6	See 1.10.7, Light and Glare, Policy 47, above.
	CHAPTER 2, CIRCU	ULATION ELEMENT
2.1 Introduction		
<b>Goal 4:</b> Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.	Consistent	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, of the Kern County General Plan, above.
<b>Goal 5:</b> Maintain a minimum [level of service] LOS D for all roads throughout the County.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this goal, the project would maintain a minimum LOS C or better for all roads throughout the County during operations and LOS D or better during short-term construction.
2.3.3 Highways Plan		
<b>Goal 5:</b> Maintain a minimum Level of Service (LOS) D.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this goal, the project would maintain a minimum LOS C or better for all roads throughout the County during operations and LOS D or better during short-term construction.
<b>Policy 1:</b> Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and mid-section lines. This is because the road center line can be determined by an existing survey.	Consistent	Section 4.15, <i>Transportation</i> , of this EIR provides a discussion of County circulation consistency. The project would include internal service roads. Consistent with this policy, all road improvements would be completed per Caltrans and/or County code and regulations. If access roads need to be built along lines other than those on the circulation diagram map, the project proponent, in cooperation with the County, would negotiate necessary easements to allow this.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 2:</b> This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond 2010. Where the Kern County Planning and Natural Resources Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert regions for arterial right-of-way. The County shall routinely protect all midsection lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow construction on surveyed section and midsection lines, right-of-way width shall be the size shown on the diagram map. No surveyed section and midsection "grid" will comprehensively apply to the Mountain Region.	Consistent	See 2.3.3, <i>Highway Plan</i> , Policy 1, of the Kern County General Plan, above. The project includes a request for an amendment to the Circulation Element of the Kern County General Plan to eliminate future road reservations along portions of the section and mid-section lines of Sections 11, 12, 13, and 14, to allow for efficient placement of solar panels. The County allows for removal of the reserved section and mid-section lines when approved by the Kern County Board of Supervisors. Approval of this request by the Board of Supervisors would result in consistency with the General Plan Circulation Element.

	Consistency	
Goals and Policies	Determination	Project Consistency
<b>Policy 3:</b> 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.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this measure, the 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.
• 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.		
<b>Measure A:</b> 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, <i>Highway Plan</i> , Policy 3, of the Kern County General Plan, above.
2.3.4 Future Growth		
<b>Goal 1:</b> To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.	Consistent	See 2.3.3, <i>Highway Plan</i> , Policy 3, of the Kern County General Plan, above.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 2:</b> The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below Level of Service (LOS) D. Utilization of the CEQA process would help identify alternatives to or mitigation for such developments. Mitigation could involve amending the Land Use, Open Space, and Conservation Element to establish jobs/housing balance if projected trips in any traffic zone exceed trips identified for this Circulation Element. Mitigation could involve exactions to build offsite transportation facilities. These enhancements would reduce traffic congestion to an acceptable level.	Consistent with implementation of Mitigation Measure MM 4.15-1	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the project would maintain a minimum LOS C for all roads throughout the County during operations and LOS D or better during short-term construction. 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.
<b>Policy 4:</b> As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards unless improvements along State routes are necessary then roads shall be built to Caltrans standards. Developers shall locate these roads (width to be determined by the Circulation Plan) along centerlines shown on the circulation diagram map unless otherwise authorized by an approved Specific Plan Line. Developers may build local roads along lines other than those on the circulation diagram map. Developers would negotiate necessary easements to allow this.	Consistent	See 2.3.3, <i>Highway Plan</i> , Policy 1, above.
<b>Policy 5:</b> When there is a legal lot of record, improvement of access to County, city or State roads will require funding by sources other than the County. Funding could be by starting a local benefit assessment district or, depending on the size of a project, direct development impact fees.	Consistent	Consistent with this policy, the project proponent would fund improvements to driveways that provide access to any County, city, or State roads.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 6:</b> The County may accept a developer's road into the county's maintained road system. This is at Kern County's discretion. Acceptance would occur after the developer follows the above requirements. Roads are included in the County road maintenance system through approval by the Board of Supervisors.	Consistent	The project would not develop a public road. However, consistent with this policy, the project proponent would be required to negotiate approval with the County where any proposed private access driveways would intersect public right-of-way.
<b>Measure C:</b> Project development shall comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards.
2.3.10 Congestion Management Programs		
<b>Goal 1:</b> To satisfy the trip reduction and travel demand requirements of the Kern Council of Government's Congestion Management Program.	Consistent with implementation of Mitigation Measure MM 4.15-1	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this goal, the project would maintain a minimum LOS C for all roads throughout the County. Additionally, implementation of Mitigation Measure MM 4.15-1 would require the preparation of a Construction Traffic Control Plan to be reviewed and approved by Kern County and Caltrans, which would further reduce impacts to traffic and transportation.
<b>Goal 2:</b> To coordinate congestion management and air quality requirements and avoid multiple and conflicting requirements.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards and would not conflict with the Kern COG's Congestion Management Plan (CMP).
<b>Policy 1:</b> Pursuant to California Government Code 65089(a), Kern County has designated the Kern COG as the County's Congestion Management Agency (CMA).	Consistent	See 2.3.10, Congestion Management Program, Goal 1 and 2, above.
<b>Policy 2:</b> The CMA is responsible for developing, adopting, and annually updating a CMP. The CMP is to be developed in consultation with, and with the cooperation of, the regional transportation agency (also the Kern COG), regional transportation providers, local governments, Caltrans, and the air pollution control district.	Consistent	See 2.3.10, <i>Congestion Management Program</i> , Goal 2, above. Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the project would not conflict with the Kern COG's CMP.

Goals and Policies	Consistency Determination	Project Consistency
<b>Measure A:</b> The Kern COG should request the proper consultation from County of Kern to develop and update the proper congestion management program.	Consistent	See 2.3.10, Congestion Management Program, Goal 1 and 2, above.
<b>Measure B:</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.	Consistent	See 2.3.10, Congestion Management Program, Goal 1 and 2, above.
2.5.1 Trucks and Highways		
<b>Goal 1:</b> Provide for Kern County's heavy truck transportation in the safest way possible.	Consistent	Traffic impacts are evaluated in Section 4.15, <i>Transportation</i> , of this EIR. Consistent with this policy, the project would comply with the requirements of the Kern County Zoning Ordinance, Land Division Ordinance, and Development Standards, which would ensure the provision of heavy truck transportation resulting from project implementation in the safest way feasible.
Goal 2: Reduce potential overweight trucks.	Consistent	See 2.5.1, <i>Trucks and Highways</i> , Goal 1, above.
<b>Goal 3:</b> Use State Highway System improvements to prevent truck traffic in neighborhoods.	Consistent	See 2.5.1, <i>Trucks and Highways</i> , Goal 1, above.
<b>Policy 1:</b> Caltrans should be made aware of the heavy truck activity on Kern County's roads.	Consistent	As discussed in Section 4.15, <i>Transportation</i> , of this EIR, 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. The need for and number of escorts, California Highway Patrol escorts, for oversized loads 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.
<b>Policy 2:</b> Start a program that monitors truck traffic operations.	Consistent	Consistent with this policy, as stated in Section 4.15, <i>Transportation</i> , of this EIR, with implementation of Mitigation Measure MM 4.15-1, a Construction Traffic Control Plan would be submitted to Kern County Public Works Department-Development Review and the California Department of Transportation offices for District 6, as appropriate, for approval.
<b>Policy 3:</b> Promote a monitoring program of truck lane pavement condition.	Consistent	See 2.5.1, <i>Trucks and Highways</i> , Policy 2, above.

Goals and Policies	Consistency Determination	Project Consistency
2.5.4 Transportation of Hazardous Materials		
<b>Goal 1:</b> Reduce risk to public health from transportation of hazardous materials.	Consistent with implementation of Mitigation Measure MM 4.9-1	Section 4.9, <i>Hazards and Hazardous Materials</i> , of this EIR provides a discussion of Hazardous Materials Transportation and existing regulatory requirements of the California Vehicle Code that pertain to transport of hazardous materials and wastes. Consistent with this policy, the project would not pose a significant risk to public health from transportation of hazardous materials with implementation of Mitigation Measure MM 4.9-1, which requires the preparation of a hazardous materials business plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to maintenance workers and/or the public.
<b>Policy 1:</b> 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.
<b>Policy 2:</b> Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.	Consistent with implementation of Mitigation Measure MM 4.9-1	See 2.5.4, Transportation of Hazardous Materials, Goal 1, above.
<b>Measure A:</b> Roads and highways utilized for commercial shipping of hazardous waste destined for disposal will be designated as such pursuant to Vehicle Code Sections 31303 et seq. Permit applications shall identify commercial shipping routes they propose to utilize for particular waste streams.	Consistent with implementation of Mitigation Measure MM 4.9-1	See 2.5.4, Transportation of Hazardous Materials, Goal 1, above.

Goals and Policies	Consistency Determination	Project Consistency
KERN COUN	TY GENERAL PLA	N CHAPTER 3, NOISE ELEMENT
3.3 Sensitive Noise Areas		
<b>Goal 1:</b> Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.	Consistent	Noise impacts, sensitive receptors and County noise thresholds are evaluated in Section 4.13, <i>Noise</i> , of this EIR. As discussed in that section, the project would not cause significant impacts to sensitive receptors. Thus, the project would be consistent with this goal.
<b>Goal 2:</b> 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 project would be consistent with existing land use designations of the project site.
<b>Policy 1:</b> 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.
<b>Policy 2:</b> Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health.	Consistent	See 3.3, Sensitive Noise Areas, Goal 1, above.
<b>Policy 3:</b> Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.	Consistent	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1, above. Consistent with this policy the project would be encouraged to provide vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise. However, as noted in Section 4.13, <i>Noise</i> , of this EIR, noise levels above 65 dBA exterior (L <sub>dn</sub> ) and 45 dBA interior (L <sub>dn</sub> ) were not identified from stationary source on the project site.
<b>Policy 4:</b> Utilize good land use planning principles to reduce conflicts related to noise emissions.	Consistent	See 3.3, <i>Sensitive Noise Areas</i> , Goal 2, above. Noise-sensitive land uses are evaluated in Section 4.13, <i>Noise</i> , of this EIR.
<b>Policy 7:</b> Employ the best available methods of noise control.	Consistent	See 3.3, Sensitive Noise Areas, Goal 1, above.
<b>Measure A:</b> Utilize zoning regulations to assist in achieving noise-compatible land use patterns.	Consistent	This section of the EIR discusses the land uses proposed by the project. As discussed in this section, the project would be consistent with existing land use and zoning designations of the project site.

Goals and Policies	Consistency Determination	Project Consistency
<b>Measure C:</b> 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 project will be reviewed for conformance with the policies outlined in this element.
<b>Measure F:</b> Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB $L_{dn}$ and interior noise levels in excess of 45 dB $L_{dn}$ .	Consistent	See 3.3, <i>Sensitive Noise Areas</i> , Goal 1 and Measure A, of the Kern County General Plan.
<b>Measure G:</b> 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:	Consistent	Consistent with this measure, the project will prepare an acoustical analysis in accordance with the requirements of Chapter 3, <i>Noise Element</i> , Measure G, of the Kern County General Plan.
<ul><li>a) Be the responsibility of the applicant.</li><li>b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.</li></ul>		
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		
Goals and Policies	Consistency Determination	Project Consistency
---	---	--
<b>Measure I:</b> Noise analyses shall include recommended mitigation, if required, and shall:	Consistent	Consistent with this measure, a noise assessment was conducted for the project and is referenced in Section 4.13, <i>Noise</i> , of this EIR. In accordance with this
a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.	measure, the noise assessment includes representative noise recommended best management practices, estimated noise leve Community Noise Equivalent Level (CNEL), and estimates of p	measure, the noise assessment includes representative noise measurements, recommended best management practices, estimated noise levels, in terms of Community Noise Equivalent Level (CNEL), and estimates of noise exposure.
<ul> <li>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.</li> </ul>		
c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.		
<ul> <li>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.</li> </ul>		
<b>Measure J:</b> 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 COUNT	ГҮ GENERAL PLA	AN CHAPTER 4, SAFETY ELEMENT
4.1 Introduction		

Goal 1: Minimize injuries and loss of life and reduce	Consistent	Consistent with this goal, the project would be required to comply with adopted
property damage.		safety regulations, such as the Fire Code, and related policies in the Kern
		County General Plan.

Goals and Policies	Consistency Determination	Project Consistency		
4.2 General Policies and Implementation Measure	4.2 General Policies and Implementation Measures, Which Apply to More Than One Safety Constraint			
<b>Measure A:</b> All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisor's action could involve the establishment of a land use activity susceptible to such hazards.	Consistent	Section 4.7, <i>Geology and Soils</i> , of this EIR, discusses potential geologic hazards, Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, discusses potential flood hazards, and Section 4.18, <i>Wildfire</i> , of this EIR discusses potential fire hazards as a result of project implementation. Consistent with this measure, all hazards have been considered as part of this analysis.		
<b>Measure F:</b> 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 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	4.3 Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure			
<b>Policy 1:</b> 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 project would not include development for human occupancy, and would not be located near an active earthquake fault.		
<b>Measure B:</b> Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.	Consistent	See 1.3, <i>Physical and Environmental Constraints</i> , Measure D, of the Kern County General Plan, above.		
<b>Measure C:</b> The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.	Consistent	See 1.3, <i>Physical and Environmental Constraints</i> , Goal 1, of the Kern County General Plan, above.		

Goals and Policies	Consistency Determination	Project Consistency
4.5 Landslides, Subsidence, Seiche, and Liquefact	ion	
<b>Policy 3:</b> Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	Consistent with implementation of Mitigation Measure MM 4.10-1	As discussed in Section 4.7, <i>Geology and Soils</i> , conditions for landslides are also not present at the site which is characterized by relatively gradual inclines across the site. Grading would be subject to compliance with the NPDES General Construction Permit requirements and the implementation of required BMPs would have the ability to minimize the potential for erosion or loss of topsoil. Adherence to the requirements of the Kern County Building Code and the CBC would ensure that effects from seismic-related ground failure including liquefaction would be minimized. The risk of soil liquefaction or collapse for the project area is considered negligible. (Jacobs 2019). See Section 4.7, <i>Geology and Soils</i> , of this EIR. In addition, with regard to erosion, as discussed in Section 4.10, <i>Hydrology and Water Quality</i> , of this EIR, the project would implement Mitigation Measure MM 4.10-1, which requires the completion of a hydrologic study and final drainage plan for the project prior to the issuance of a grading permit. This would serve to reduce any impacts related to erosion, consistent with this policy.
4.6 Wildland and Urban Fire		
<b>Policy 1:</b> Require discretionary projects to assess impacts on emergency services and facilities.	Consistent with implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2	Consistent with this policy, impacts on emergency services and facilities are discussed and evaluated in Section 4.14, <i>Public Services</i> , of this EIR.
<b>Policy 3:</b> 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 with or prohibit the County's ability to meet this policy. Mitigation Measure MM 4.14-1 requires the proponent to develop a fire safety plan for use during construction and operational activities. All onsite employees would be trained on fire safety and how to respond to onsite fires, should they occur. See Sections 4.9, <i>Hazards and Hazardous Materials</i> , and 4.14, <i>Public Services</i> , and 4.18, <i>Wildfire</i> , of this EIR.
<b>Policy 4:</b> Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.	Consistent with implementation of Mitigation Measure MM 4.15-1	Section 4.15, <i>Transportation</i> , of this EIR includes Mitigation Measure MM 4.15-1 would require the approval of a Construction Traffic Control Plan, encroachments and or other necessary permits by Caltrans and/or the Kern County Roads Dept. The project proponent would develop and implement a fire safety plan for use during construction and operation.

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 6:</b> 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.
<b>Measure A:</b> 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 Measures MM 4.14-1 and MM 4.14-2	Consistent with this measure, the project would implement Mitigation Measure MM 4.14-1, which would require preparation and implementation of a fire safety plan to ensure the provision of appropriate access. Additionally, the project would implement Mitigation Measure MM 4.14-2, which would require the project to compensate the county for any deficiencies in service resulting from project construction and operation.
4.9 Hazardous Materials		
<b>Measure A:</b> 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.
4.10 Abandoned Open Shafts and Wells		
<b>Policy 1:</b> The County should protect residents from the hazards of improperly abandoned mine shafts.	Consistent	The solar facilities are compatible with open space, wind energy, and other resource management land uses. The project site is not located within an area that has abandoned mine shafts. Furthermore, the project does not propose mining on the project site. The project would not result in hazards from improperly abandoned mine shafts.

- - -

Goals and Policies	Consistency Determination	Project Consistency
<b>Policy 2:</b> The County should protect residents from the hazards associated with development in areas where wells have been drilled and abandoned for exploration and/or production of oil and natural gas.	Consistent	See 4.10, <i>Abandoned Open Shafts and Wells</i> , Policy 1, above. Additionally, based on CalGEM, the project site is not located within a known active oil production field, but does include six plugged exploratory oil wells located within the project boundary. Based on existing records, the wells did not produce oil or gas and were immediately plugged. During construction around the plugged wells, construction personnel could encounter unknown oil and/or gas, resulting in a potentially significant impact. The project does not propose habitable structures or full time employment onsite. Furthermore, Implementation of Mitigation Measure MM 4.9-2 would be required to ensure that these wells were plugged sufficiently to prevent any leakage of harmful gases prior to permit approval.
<b>Measure B:</b> Support the construction site review program of the Department of Oil, Gas and Geothermal Resources that ensures that wells are precisely located, properly plugged and abandoned, and tested for leakage prior to development of the area.	Consistent	See 4.10, Abandoned Open Shafts and Wells, Policy 2, above.

### TABLE 4.11-2: CONSISTENCY ANALYSIS WITH KERN COUNTY GENERAL PLAN FOR LAND USE

#### KERN COUNTY GENERAL PLAN CHAPTER 5, ENERGY ELEMENT

5.2 Importance of Energy to Kern County		
<b>Policy 8:</b> 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.
<b>Policy 10:</b> 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.

Goals and Policies	Consistency Determination	Project Consistency
5.4 Electricity Resources and Generation		
5.4.5 Solar Energy Development		
<b>Goal 1:</b> Encourage safe and orderly commercial solar development.	Consistent	Consistent with this goal, the project would develop solar PV facilities that would generate 115 MW of solar energy and 80 MW of battery energy storage, and would offset an equivalent amount of fossil fuel-generated electrical power. The site is on vacant land, and is located at a distance from established communities. The location of the site would ensure a safe and orderly development of the solar facilities.
<b>Policy 1:</b> The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.	Consistent	Consistent with this policy, the project would develop solar PV facilities capable of generating 115 MW of solar energy and 80 MW of battery energy storage, and would offset an equivalent amount of fossil fuel-generated electrical power in the valley region of Kern County. Operation of the project would improve air quality within the County and assist the County in meeting attainment goals. See Section 4.3, <i>Air Quality</i> , of this EIR.
<b>Policy 3:</b> The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.	Consistent	Consistent with this policy, the project proposes the development of PV power generation and storage facilities in the valley region of Kern County. Final review of the 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 project would not pose significant environmental or public health and safety hazards.
<b>Policy 4:</b> The County shall encourage solar development in the desert and valley regions previously disturbed, and discourage the development of energy projects on undisturbed land supporting state or federally protected plant and wildlife species.	Consistent	Consistent with this policy, the project proposes the development of PV power generation and storage facilities in the valley region of Kern County. The project site was historically used for dry farming, grazing, and oil exploration. It is currently disturbed and used for grazing. Final review of the project by the Kern County Planning and Natural Resources Department, as well as adherence to all applicable local, state and federal regulations.

Goals and Policies	Consistency Determination	Project Consistency
5.4.7 Transmission Lines		
<b>Goal 1:</b> To encourage the safe and orderly development of transmission lines to access Kern County's electrical resources along routes, which minimize potential adverse environmental effects.	Consistent	Final review of the 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 project's transmission lines would not pose significant environmental or public health and safety hazards.
		The project's gen-tie line was analyzed throughout this Draft EIR. One of the project's objectives is to design the project in an environmentally responsible manner to avoid and/or minimize potential impacts, consistent with existing Kern County land use plans. Further, project gen-tie poles will avoid drainages, including a 25-foot buffer.
<b>Policy 5:</b> The County should discourage the siting of above-ground transmission lines in visually sensitive areas.	Consistent	See 5.4.7, <i>Transmission Lines</i> , Goal 1, above. Further, visual impacts are evaluated in Section 4.1, <i>Aesthetics</i> , of this EIR.

This page intentionally left blank

# 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 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) [formerly the California Division of Oil, Gas, and Geothermal Resources (DOGGR)], *Phase I Environmental Site Assessment and Limited Soil Sampling Report* (SCS Engineers, 2019), provided in Appendix J of this EIR, and Kern County publications and maps as cited throughout this section.

# 4.12.2 Environmental Setting

Public policy is that the nonrenewable characteristic of mineral deposits necessitates the careful and efficient development of mineral resources in order to prevent the unnecessary waste of these deposits due to careless exploitation and uncontrolled urbanization. Management of these mineral resources will protect not only future development of mineral deposit areas but will also limit the exploitation of mineral deposits so that adverse impacts caused by mineral extraction will be reduced or eliminated. This section discusses the existing conditions related to mineral resources within the project area, including the project site.

# **Regional Setting**

Mineral and petroleum resources are basic to Kern County's economy; Kern County produces more oil than any other county in the United States. In addition, borax, cement and construction aggregates constitute major economic mineral resources. The Surface Mining and Reclamation Act of 1975 (SMARA) requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to its known or inferred mineral potential. The State Geologist has classified 2,971 square miles of land in Kern County as MRZs of varying significance. Mineral resources in Kern County include numerous mining operations that extract a variety of materials, including sand and gravel, stone, gold, dimensional stone, limestone, clay, shale, gypsum, pumice, decorative rock, silica, and specialty sand. Significant mineral resources located in southern Kern County include Portland Cement Concrete-Grade Aggregate, antimony, silver, and gold. 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 4.12-1**, *Classified Mineral Resources within Kern County*, demonstrates the classified mineral resources within Kern County that are part of the MRZ-2 group and, therefore, have a demonstrated mineral significance (as opposed to the MRZ-3 group, which has an undetermined mineral significance).

Mineral Resource	MRZ Classification	Number of Areas	<b>Total Acreage</b>
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, 1999b.			

 TABLE 4.12-1:
 CLASSIFIED MINERAL RESOURCES WITHIN KERN COUNTY

### **Petroleum Resources**

As mentioned above, Kern County produces more oil than any other county in the United States. The valley floor area of Kern County and the surrounding lower elevations of the mountain ranges contain numerous deposits of oil and gas resources, a major economic resource for the County. The project site is located directly adjacent to and south of the Tejon Oil Field, which includes many active, idle, and plugged oil and gas wells. The closest active oil and gas well within the Tejon Oil Field is located approximately 180 feet from the northern boundary of the project site (see Figure 4.12-1, Petroleum Mining in the Project Vicinity). The project is not located within a known oil production field, nor does the site have any known active oil & gas wells (CalGEM, 2019). However, the project site does include six oil & gas exploration wells that have been plugged (CalGEM, 2019). The oil & gas wells have been classified by CalGEM as dry hole wells, which are defined as wells that have not encountered hydrocarbons in economically producible quantities (Schlumberger, 2020). While the oil & gas wells have been plugged and abandoned, they may be required additional measures to comply with current CalGEM standards. Additionally, the project site is not located within a designated mineral and petroleum resource site within the Kern County General Plan. While the project site is partially within the General Plan designation of 8.4 (Mineral and Petroleum), the project site is not located within the NR (Natural Resources) or PE (Petroleum Extraction) zoned districts.



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.12-1: PETROLEUM MINING IN THE PROJECT VICINITY

### Sand and Gravel

As discussed in the Land Use, Open Space, and Conservation Element of the Kern County General Plan, construction aggregates are a major economic mineral resource for Kern County. 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 150 miles northeast of the project site, and in alluvial fan deposits along the Tehachapi Mountains at the southern end of the County, approximately 10 miles south of the project site. Most of the recent alluvium in the San Joaquin Valley floor is composed of sand used as a source of road base material. The Edmonston Rock Plant is located less than a mile east of the project site.

### Borax

As discussed in the Land Use, Open Space, and Conservation Element of the Kern County General Plan, borax constitutes a major economic mineral resource for Kern County. 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. The discovery of borates in southeastern Kern County in the Kramer District was accidental, when a water well penetrated lakebeds containing colemanite (calcium borate) in 1913. In 1927 underground mining of the minerals kernite and borax began and continued until 1957, when underground operations ceased and open-pit mining began, eventually becoming the largest open-pit mine in California. Annually over 1.8 million tons are removed from this mine, which supplies about 40 percent of the world's supply of borates. There are several other sources of borate minerals in the County (CGS, 1999b).

### 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. 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, 1999b).

## **Dimensional Stone**

Dimension stone is natural rock materials quarried for the purpose of obtaining blocks or slabs that meet specification as to size (width, length, and thickness) and shape. Color grain texture and pattern, and surface finish, durability, strength, and polish ability are important selection criteria in determining dimension stone. Deposits of marble, sandstone, schist, and other rocks in Kern County have been sources of modest tonnages of building stone which have been utilized as dimension stone, field stone, rubble,

and flagstone. Most of the dimension stone (marble and flagstone) was mined until 1904; field stone and flagstone have been mined mostly since about 1952 in the area around Randsburg (CGS, 1999b).

### **Precious Minerals**

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, 1999b).

# **Local Setting**

The project site is located in the southern portion of central Kern County, at the northern base of the Tehachapi Mountains and consists of undeveloped open space. The project site where the solar arrays would be developed is not designated as a mineral recovery area by the Kern County General Plan, nor is it identified as a MRZ by the Department of Conservation's State Mining and Geology Board. However, a portion of the project site, the gen-tie line, is designated as a mineral recovery area by the Kern County General Plan and as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. A portion of the project site is designated by Kern County General Plan as 8.4 (Mineral and Petroleum). In addition, there are six plugged oil and gas exploration wells located within the project boundary (CalGEM, 2019). As mentioned above, the Tejon Oil Field is located directly adjacent to the northern project boundary and several oil and gas wells are located with the area; however, no active oil, gas, or geothermal wells are located on the project site (CalGEM, 2019).

The nearest mine to the project site is the Edmonston Rock Plant, located less than 1 mile southeast of the project site, which actively mines sand and gravel. **Table 4.12-2**, *Mines within the Project Vicinity*, lists the mines located within a 10-mile radius of the project site, their status, and the commodity being mined (also see **Figure 4.12-2**, *Mines within the Project Vicinity*).

Mine Title	Status	Commodity	Distance from Project Site
Edmonston Rock Plant	Active	Sand and Gravel	4,000 feet east
Wheeler Ridge	Active	Sand and Gravel	6 miles northwest
Lebec Quarry	Active	Crushed Stone	7 miles southeast
Lebec (Los Robles Plant)	Active	Cement	8 miles south
Lebec Cement Plant	Active	Crushed Stone	10 miles southeast
SOURCE: USGS, 2019.			

TABLE 4.12-2: MINES WITHIN THE PROJECT VICINITY



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE4.12-2: MINES WITHIN PROJECT VICINITY

# 4.12.3 Regulatory Setting

# Federal

There are no applicable federal regulations for this issue area.

# State

## **California Geologic Energy Management Division**

The CalGEM (formerly known as the DOGGR) 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, 2019).

## Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 requires the State Geologist to classify land into MRZs according to its known or inferred mineral potential. The primary products are mineral land classification maps and reports. Local agencies are required to use the classification information when developing land-use plans and when making land-use decisions (DOC, 2019). MRZs are defined in detail in *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** Emphasize conservation and development of identified mineral deposits. Policy 14: Lands classified as MRZ-2, as designated by the State of California, should be protected Policy 17: from encroachment of incompatible land uses.

#### Implementation Measure

Measure H: Use the California Geological Survey's latest maps to locate mineral deposits until the regional and statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.

# 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, United States Geological Survey (USGS) 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 *CEQA Guidelines* Appendix G, to determine if a project could potentially have a significant adverse effect on mineral resources.

A project would have a significant adverse effect on mineral resources if it would:

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

# **Project Impacts**

# Impact 4.12-1: The project would result in the loss of availability of a known mineral resource that would be of value to the region and residents of the State.

The majority of the project site is not located on lands classified as MRZs by the CGS; however, a portion of the project site, specifically the gen-tie line, is designated as a mineral recovery area by the Kern County General Plan and as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. While the project site is partially within the General Plan designation of 8.4 (Mineral and Petroleum), the project site not located within the NR (Natural Resources) or PE (Petroleum Extraction) zone districts. The nearest active mine, Edmonston Rock Plant, is relatively close at 4,000 feet east of the project site (Figure 4.12-2); however, still far enough away that the project would not prevent continued operation of the plant. Given these characteristics, the project would not interfere with nearby mineral extraction operations and would not result in the loss of land designated for mineral resources. The nearest oil extraction facility is the Tejon Oil Field located directly north of the project site. The project site is not a part of the active Tejon Oil Field. As noted above, there are six plugged oil & gas exploratory wells located on the project site. The documents associated with these wells indicate that they were abandoned due to no oil or gas being found (SCS Engineers, 2019). Installation of solar panels on the site would not impede access to mineral resources or potential mineral operations in adjacent areas. The project would not interfere with current oil and mineral extraction operations and would not result in the loss of land designated for mineral resources. 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. As previously discussed, there are six plugged oil & gas exploratory wells located on the project site. These wells have been classified by CalGEM as dry hole wells, which are defined as wells that have not encountered hydrocarbons in economically producible quantities (Schlumberger, 2020). While the oil & gas wells have been plugged and abandoned, according to well records from the late 1930s through early 1970s (SCS Engineers, 2019), upon consultation with CalGEM the wells would be required to be tested for leaks and if leaks are found the wells would require re-abandonment to comply with current CalGEM standards. The installation of photovoltaic panels and gen-tie line would not preclude future onsite mineral resource development, should the project site be determined to contain mineral resources in the future. Therefore, loss of availability of mineral resources impacts would be less than significant.

### **Mitigation Measures**

No mitigation would be required.

### Level of Significance

Impacts would be less than significant.

# **Cumulative Setting, Impacts, and Mitigation Measures**

As described in Chapter 3, Project Description, there are two cumulative projects within a six-mile radius of the project site 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 project located within 0.25 miles of the project site is the expansion of surface mining by the Griffith Company (Edmonton Rock Quarry), which is located approximately 0.75 miles east of the project site and approximately 0.91 miles from the Tejon Oil Field. However, development of the project would not interfere with this expansion nor prevent any other current or future mining project. A portion of the project site, the gen-tie line, is designated as a mineral recovery area by the Kern County General Plan and as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. However, the project site would not prevent continued operation of the existing mining and petroleum extraction sites. Therefore, the proposed project, combined with other related projects, would not would not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site. The project's incremental effect is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus would be less than significant.

### **Mitigation Measures**

No mitigation would be required.

### **Level of Significance**

Cumulative impacts would be less than significant.

# 4.13.1 Introduction

This section of the EIR describes the affected environment and regulatory setting for the 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 *Noise Study for the Pastoria Solar Project* (Jacobs, 2019) provided in Appendix L of this EIR.

# **Noise Fundamentals**

An understanding of the physical characteristics of noise is useful for evaluating environmental noise impacts. The methods and metrics used to quantify noise exposure, human response, and relative judgment of loudness are also discussed, and noise levels of common noise environments are presented.

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and interferes with or disrupts normal activities. The effects of noise on people can be grouped into four general categories:

- Subjective effects (dissatisfaction, annoyance);
- Interference effects (communication and sleep interference, learning);
- Physiological effects (startle response); and
- Physical effects (hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. The subjective responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, its appropriateness to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Interference effects of environmental noise refer to those effects that interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, 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 ( $\mu$ Pa). 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 dBA = 63 dBA; 80 dBA + 80 dBA = 83 dBA). However, an increase of 10 dBA is required to double the perceived loudness of a sound, and a doubling or halving of the acoustical energy (a 3 dBA difference) is at the lower limit of readily perceived change.

Although dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most ambient environmental noise includes a mixture of noise from nearby and distant sources that creates an ebb and flow of sound, including some identifiable sources plus a relatively steady background noise in which no particular source is identifiable. A single descriptor, termed the equivalent sound level ( $L_{eq}$ ), is used to describe sound that is constant or changing in level.  $L_{eq}$  is the energy-mean dBA during a measured time interval. It is the "equivalent" sound level produced by a given constant source equal to the acoustic energy contained in the fluctuating sound level measured during the interval. In addition to the energy-average level, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum instantaneous ( $L_{max}$ ) and minimum instantaneous ( $L_{min}$ ) noise level indicators that represent the root-mean-square maximum and minimum noise levels measured during the monitoring interval. The  $L_{min}$  value obtained for a particular monitoring location is often called the acoustic floor for that location.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors  $L_{10}$ ,  $L_{50}$ , and  $L_{90}$  may be used, which represent the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of the measured time interval, respectively. Sound levels associated with  $L_{10}$  typically describe transient or short-term events,  $L_{50}$  represents the median sound level during the measurement interval, and  $L_{90}$  levels are typically used to describe background noise conditions.

The Day-Night Average Sound Level ( $L_{dn}$  or DNL) represents the average sound level for a 24-hour day and is calculated by adding a 10 dBA penalty to sound levels during the night period (10 p.m. to 7 a.m.). The  $L_{dn}$  is the descriptor of choice and used by nearly all federal, state, and local agencies throughout the United States to define acceptable land use compatibility with respect to noise. Within California, the Community Noise Equivalent Level (CNEL) is sometimes used. CNEL is very similar to  $L_{dn}$ , except that an additional 5 dBA penalty is applied to the evening hours (7 to 10 p.m.). Because of the time-of-day penalties associated with the  $L_{dn}$  and CNEL descriptors, the dBA value of  $L_{dn}$  or CNEL for a continuously operating sound source during a 24-hour period will be numerically greater than the dBA value of the 24hour  $L_{eq}$ . 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*.

Unit of M	Ieasure	Description
dB	Decibel	Decibels, which are units for measuring the volume of sound, are measured on a logarithmic scale, representing points on a sharply rising curve. For example, 10 dB sounds are 10 times more intense than 1 dB sounds, and 20 dB sounds are 100 times more intense. A 10 dB increase in sound level is perceived by the human ear as a doubling of the loudness of the sound.
dBA	A-Weighted Decibel	A sound pressure level that has been weighted to quantitatively reduce the effect of high- and low-frequency noise. It was designed to approximate the response of the human ear to sound.
CNEL	Community Noise Equivalent Level	A metric representing the 24-hour average sound level that includes a 5 dBA penalty during relaxation hours (7 p.m. to 10 p.m.) and a 10 dBA penalty for sleeping hours (10 p.m. to 7 a.m.).
L <sub>dn</sub>	Day-Night Average Noise	The 24-hour average sound level, expressed in a single decibel rating, for the period from midnight to midnight obtained after the addition of a 10 dBA penalty to sound levels for the periods between 10 p.m. and 7 a.m.
L <sub>eq</sub>	Equivalent Noise Level	The average acoustic energy content of noise for a stated period of time. The $L_{eq}$ of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The $L_{eq}$ may also be referred to as the average sound level. $L_{eq}$ equates to $L_{eq(1)}$ for $L_{eq}$ averaged over one hour; e.g., $L_{eq(8)}$ equates averaged over eight hours.
L <sub>max</sub>	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.
$\begin{array}{c} L_{1}, \ L_{10}, \\ L_{50}, \ L_{90} \end{array}$	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.

### TABLE 4.13-1: COMMON NOISE METRICS



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT

NOISE PUBLIC REACTION LEVEL (dBA, Leq		NOISE LEVEL (dBA, Leq)	COMMON INDOOR NOISE LEVELS	COMMON OUTDOOR NOISE LEVELS	
		- <b>T</b> - 110-	Rock Band		
				Jet Flyover at 1000 Ft.	
		100			
LOCAL COMMITTEE ACTIVITY WITH	4 Times As Loud			Gas Lawn Mower at 3 Ft.	
LETTERS OF PROTEST	4 Times As Loud	► <u> </u>	Food Blender at 3 Ft.		
COMPLAINTS LIKELY	Twice As Loud	► <u> </u>	Garbage Disposal at 3 Ft.	Noisy Urban Daytime	
			Shouting at 3 Ft.		
COMPLAINTS POSSIBLE		► <del>  </del> 70 -	Vacuum Cleaner at 10 Ft.	Gas Lawn Mower at 100 Ft.	
COMPLAINTS RARE		60		Commercial Area Heavy Traffic at 300 Ft.	
	1/2 A3 Loud		Large Business Office		
ACCEPTANCE	1/4 As Loud	<b>5</b> 0 -	Dishwasher Next Room – – – – – – –	– – – – – Quiet Urban Daytime · – – – – –	
		40 -	- Small Theater Large – – – – – – – –	Quiet Urban Nighttime	
		30	Conference Room (Background) Library	Quiet Suburban Nighttime	
			Concert Hall (Background)	Quiet Rural Nighttime	
	_		Broadcast and Recording Studio		
CUP 9, Map 219; Williamson Ac Land Use Contract Cancellation 19-02; GPA 10, Map 219	n		Threshold of Hearing		

FIGURE 4.13-1: EFFECTS OF NOISE ON PEOPLE

# **Vibration Fundamentals**

As described in the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment* (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) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. Peak particle velocity is typically a factor of 1.7 to 6 times greater than RMS vibration velocity (FTA, 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. Annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second (in/sec) PPV, while the standard for even the most sensitive and fragile structures is 0.12 in/sec PPV (FTA, 2018).

In residential areas, the background vibration velocity level is usually around 50 VdB (approximately 0.0013 in/sec PPV). This level is well below the vibration velocity level threshold of perception for humans, which is approximately 65 VdB. A vibration velocity level of 75 VdB is considered to be the approximate dividing line between barely perceptible and distinctly perceptible levels for many people (FTA, 2018).

# 4.13.2 Environmental Setting

# **Project Location**

The project is located on an approximately 650-acre site located in south-central Kern County southeast of the intersection of State Route 99 and Interstate 5 (I-5), as shown in Chapter 3, *Project Description*, Figure 3-2, *Project Vicinity*, of this EIR. The project site has a General Plan Land Use Designation of Extensive Agriculture (8.3) for parcels 241-310-08 and 241-310-10 and Intensive Agriculture (8.1) for

parcels 241-310-15 and 241-310-17. All four parcels belong to the Exclusive Agriculture (A) Zone District. The Pastoria Solar site and the surrounding vicinity are home to numerous existing agricultural and industrial operations such as the existing Pastoria Energy Facility (PEF), other power generation facilities, gravel quarry, and oil storage tank farms, in addition to the California Aqueduct and the Department of Water Resources (DWR) Edmonston Pumping Plant.

The project site is relatively flat, however, the foothills at the base of the Tehachapi Mountain Range are approximately 1 mile south of the project site. Elevations on the project site range from approximately 1,169 feet at the southwest corner to 1,027 feet at the northeast corner, for a change of 142 feet over 1.41 miles (approximately 2 percent slope).

The project site encompasses existing agricultural land, with the PEF and an existing gravel quarry operation located to the east. Other surrounding land uses include agricultural uses such as vineyards, orchards, and open grazing land. The nearest residence or other sensitive receptor is located approximately 2.5 miles from the northwest corner of the project site.

# **Existing Noise Environment**

The project area is sparsely populated and the nearest communities to the project site are approximately 5 miles to the West, which includes Mettler, Wheeler Ridge, and Grapevine. Therefore, the noise sources of vehicle traffic on nearby roadways, occasional aircraft overflights, and human recreational activity would generate noise that would establish the ambient noise environment of the project site and surrounding areas.

Existing noise in the project area was provided in the *Noise Study for the Pastoria Solar Project* (Jacobs, 2019) provided in Appendix L of this EIR. **Table 4.13-2**, *Summary of Noise Survey Locations*, describes the noise monitoring locations. The ambient sound level measurements are summarized in **Table 4.13-3**, *Ambient Sound Levels in the Project Vicinity*.

Location Number	Location Description (Grapevine Specific & Community Plan Area)	Primary Noise Sources
LT4	Western-central portion of Plan Area 4	Distant Vehicular Traffic on I-5
LT5	South-central potion of Plan Area 5a	Traffic along Edmonston Pumping Plant Road
LT6	Eastern portion of Plan Area 5b	Traffic along Edmonston Pumping Plant Road, distant industrial uses including aggregate quarry, electrical substation, Edmonston Pumping Plant
LT7	Central portion of land use Area 6a	Distant vehicular traffic on I-5 and commercial/industrial uses in TRCC (0.5 miles west)
SOURCE:	Jacobs, 2019.	

Location	L <sub>dn</sub> (dBA)	Minimum (dBA)	Maximum (dBA)	Distance to Project (miles)
LT4 – Western-central portion of Plan Area 4	53	41	50	2.7
LT5 – South-central potion of Plan Area 5a		34	48	1.6
LT6 – Eastern portion of Plan Area 5b	58	38	57	0.8
LT7 – Central portion of land use Area 6a		39	46	3
SOURCE: Jacobs, 2019.				

<b>TABLE 4.13-3:</b>	<b>AMBIENT SOUND</b>	LEVELS IN THE	<b>PROJECT</b>	VICINITY
----------------------	----------------------	---------------	----------------	----------

Given the size of the project site and the sparsely distributed residential dwellings that are located at various distances from the project site boundary, the four short-term measurement locations were selected to provide a representative sample of the existing ambient noise levels around the project site. The ambient noise measurements indicate that 24-hour average noise levels generally ranged between 45 and 58 dBA CNEL in the project area.

## **Noise Sensitive Receptors**

Land uses deemed sensitive by the State of California include schools, hospitals, rest homes, and long-term care and mental care facilities, which are considered to be more sensitive to ambient noise levels than others. Many jurisdictions also consider residential uses particularly noise-sensitive because families and individuals expect to use time in the home for rest and relaxation, and noise can interfere with those activities. Some jurisdictions may also identify other noise-sensitive uses such as churches, libraries, and parks. The Noise Element of the County General Plan identifies residences, schools, hospitals, parks, churches, and other similar land uses to be noise sensitive. Furthermore, sensitive noise receptors may also include threatened or endangered biological species, although many jurisdictions, including Kern County, have not adopted noise standards for wildlife areas. Land uses that are generally not considered to be noise sensitive receptors include office, retail, and commercial developments, with exception of commercial lodging facilities.

Land uses sensitive to vibration include concert halls, hospitals, libraries, vibration-sensitive research options, residential areas, schools, and offices. As illustrated in **Figure 4.13-2**, *Noise Monitoring Locations*, there are no residences or other noise sensitive receptors on or adjacent to the project site. The nearest residential dwelling is located approximately 2.5 miles to the northwest of the project site and a small cluster of homes is located approximately 2.7 miles northwest of the project site. Two commercial lodging facilities are located at Tejon Commerce Center, approximately 3.5 miles northwest of the project site. Other sensitive noise receptors, such as schools, hospitals, rest homes, long-term care and mental care facilities, churches, libraries, and parks are not present within a 10-mile radius.



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.13-2: NOISE MONITORING LOCATIONS

# 4.13.3 Regulatory Setting

# Federal

# Noise Control Act of 1972 (42 USC 4910)

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 costs for achieving these levels or other potentially relevant considerations. It is intended to "provide State and local departure for the purpose of decision-making." USEPA is careful to stress that the recommendations contain a factor of safety and do not consider technical or economic feasibility issues and therefore should not be construed as standards or regulations.

## Federal Energy Regulatory Commission, 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  $L_{dn}$ .

# 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 the HUD:

- 65 L<sub>dn</sub> or less Acceptable
- $>65 L_{dn}$  and  $<75 L_{dn}$  Normally unacceptable, appropriate sound attenuation measures must be provided
- $\bullet \quad > 75 \ L_{dn} Unacceptable$

HUD's regulations do not contain standards for interior noise levels. 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 (OSHA), *Occupational Noise Exposure; Hearing Conservation Amendment* (Federal Register 48 [46], 9738–9785, 1983) stipulates that protection against the effects of noise exposure shall be provided for employees when sound levels exceed 90 dBA over an 8-hour exposure period. Protection shall consist of feasible administrative or engineering controls. If such controls fail to reduce sound levels to within acceptable levels, personal protective equipment shall be provided and used to reduce exposure of the employee. Additionally, a Hearing Conservation Program must be instituted by the employers whenever employee noise exposure equals or exceeds the action level of an 8-hour time-weighted average sound level of 85 dBA  $L_{eq (8)}$ . The Program requirements consist of periodic area and personal noise monitoring, performance and evaluation of audiograms, provision of hearing protection, annual employee training, and record keeping.

# State

The state requires all municipalities to prepare and adopt a comprehensive long-range general plan, which must contain a noise element (California Government Code Section 65302(f) and Section 46050.1 of the Health Safety Code). The requirements of the noise element include describing the noise environment quantitatively using a cumulative noise metric such as CNEL or  $L_{dn}$ , establishing noise/land use compatibility criteria, and establishing programs for achieving and/or maintaining land use compatibility. Noise elements should address all major noise sources in the community, including mobile and stationary noise sources. In California, most cities and counties have also adopted noise ordinances, which serve as enforcement mechanisms for controlling noise.

The California Department of Health Services has studied the correlation of noise levels and their effects on various land uses 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 4.13-3**, *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 go up to 70 dBA CNEL.

*CEQA Guidelines* (PRC Section 21000 et seq.) requires the identification of "significant" environmental impacts and their feasible mitigation. Section XI of *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.



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORI SOLAR PROJECT

	Community Noise Exposure – Ldn or CNEL (dBA)							
Land Use Category		50	55	60	65	70	75	80
Residential – Low Density S Family, Duplex, Mobile Hor	Single me							
Residential – Multi-Family	-							
ransient Lodging – Motel/I	Hotel							
Schools, Libraries, Churches Hospitals, Nursing Homes	s,							
Auditorium, Concert Hall, Amphitheaters	-							
Sports Arena, Outdoor Spec Sports	tator							
Playgrounds, Neighborhood	Parks							
Golf Courses, Riding Stable Recreation, Cemeteries	s, Water							
Office Buildings, Business, Commercial and Profession	al							
Industrial, Manufacturing, U Agriculture	Jtilities,							
Normally Acceptable	Specified la	ind use is s	atisfactory,	based upon tion, without a	the assumpti	on that any buo	uildings inv	olved are
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.							

### FIGURE 4.13-3: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT

19-02; GPA 10, Map 219

The state has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, Part 2, Vol. 1, California Code of Regulations), which set forth an interior standard of 45 dBA CNEL or  $L_{dn}$  in any habitable room, requiring an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard, where such units are proposed in areas subject to noise levels greater than 60 dBA CNEL or  $L_{dn}$ . Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

The state also establishes noise limits for vehicles licensed to operate on public roads (California Vehicle Code, Section 27200 et seq.). 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 a general plan is a mandatory element as required by California Government Code Section 65302(f). The State requires that local jurisdictions prepare statements of policy indicating their intentions regarding noise and noise sources, establish desired maximum noise levels according to land use categories, set standards for noise emission from transportation and fixed-point sources, and prepare implementation measures to control noise.

The Noise Element of the Kern County General Plan 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 5: Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design. Such mitigation shall be designed to reduce noise to the following levels:
  - (a)  $65 \text{ dB-L}_{dn}$  or less in outdoor activity areas.
  - (b) 45 dB-L<sub>dn</sub> or less within living spaces or other noise sensitive interior spaces.
- 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<sub>dn</sub> and interior noise levels in excess of 45 dB L<sub>dn</sub>.
- Measure G: At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:
  - a) Be the responsibility of the applicant.
  - b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
  - c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.
- Measure I: Noise analyses shall include recommended mitigation, if required, and shall:
  - a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

- b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10–20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.
- c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
- d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.
- Measure J: Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.

### Chapter 5: Energy Element

Policy 10: The County should require acoustical analysis for energy project proposals that might impact sensitive and highly-sensitive uses in accordance with the Noise Element of the General Plan.

### Kern County Zoning Ordinance

Section 19.80.030.S(1) of the Kern County Zoning Ordinance restricts noise generated by commercial or industrial uses within 500 feet of a residential use or residential zone district. The commercial or industrial use shall not generate noise that exceeds an average 65 dB  $L_{dn}$  between the hours of 7 a.m. and 10 p.m., and shall not generate noise that exceeds 65 dB, or which would result in an increase of 5 dB or more from ambient sound levels, whichever is greater, between the hours of 10 p.m. and 7 a.m. Commercial or industrial facilities that are located in the M-3 zone district are exempt from these noise-generation restrictions.

### Kern County Code of Ordinances

The Kern County Code of Ordinances, Chapter 8.36 (Noise Control), includes acceptable hours of construction, and limitations on construction related noise impacts on adjacent sensitive receptors.

### Section 8.36.020 – Prohibited sounds

It is unlawful for any person to do, or cause to be done, any of the following acts within the unincorporated areas of the county:

- H. To create noise from construction, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:
  - 1. The resource management director or a designated representative may for good cause exempt some construction work for a limited time.
  - 2. Emergency work is exempt from this section.

# **Groundborne Vibration**

There are currently no federal, state, or local regulatory standards for groundborne vibration. However, the California Department of Transportation (Caltrans) has developed vibration criteria based on potential structural damage risks and human annoyance. 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.

	Vibration Level (in/sec PPV)	
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
Newer residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

#### TABLE 4.13-4: VIBRATION CRITERIA FOR STRUCTURAL DAMAGE

#### 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

	Vibration Level (in/sec PPV)			
Human Response	Transient Sources	Continuous/Frequent Intermittent Sources		
Barely perceptible	0.04	0.01		
Distinctly perceptible	0.25	0.04		
Strongly perceptible	0.9	0.1		
Annoying to people in buildings	—	0.2		
Severe	2.0	0.4		

NOTES:

Transient sources create a single isolated vibration event, such as blasting or ball drops. Traffic, train, and most construction vibrations are considered continuous.

in/sec ppv = inches per second peak particle velocity; — = Not available

SOURCE: Jacobs, 2019.

As shown in Table 4.13-4, 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.

As shown in Table 4.13-5, with regard to human perception, vibration levels would begin to become distinctly perceptible at levels of 0.04 in/sec PPV for continuous or frequent vibration sources and 0.25 in/sec PPV for transient vibration sources. Continuous vibration levels are considered annoying for people in buildings at levels of 0.2 in/sec PPV.

# 4.13.4 Impacts and Mitigation Measures

# Methodology

Noise impacts associated with the project were assessed in this section based primarily on the *Noise Study Report for the Pastoria Solar Project* (Jacobs, 2019), provided in Appendix L of this EIR. Potential significant impacts associated with the project were evaluated on a qualitative basis through a review of existing literature and available information, and by using professional judgement in comparing the anticipated project effects on noise with existing conditions. The evaluation of project impacts is based on significance criteria established by *CEQA Guidelines* Appendix G, which the Lead Agency has determined to be appropriate criteria for this EIR.

### **Short-Term Construction Noise**

Predicted noise levels at nearby noise-sensitive land uses were calculated utilizing typical noise levels and usage rates associated with construction equipment, derived from the USEPA *Noise from Construction Equipment and Operations, U.S. Building Equipment, and Home Appliances* (USEPA, 1971) document and representative data obtained from similar construction projects. Construction noise levels were predicted assuming an average noise attenuation rate of 6 dB per doubling of distance from the source and an excess noise-attenuation rate of 1.5 dB per 1,000 feet.

Project construction activities generally include three main categories: (1) site preparation; (2) system installation; and (3) testing, commissioning, cleanup. Construction of the project is expected to occur over a 12-month period. Project construction noise would be generated primarily from (1) site preparation, construction, and installation and testing of the solar panels on the project site; and (2) vehicle traffic on access roads leading to the site from construction crew daily commutes and the transport of construction equipment and materials to the site.

Transport of construction equipment would result in a relatively high single-event noise level generated at the source (a passing dump truck at 50 feet would generate up to 84 dBA  $L_{max}$ ); however, the effect on longer-term (hourly or daily) ambient noise levels would be minimal.

Project construction would occur in specific phases, each of which has its own mix of equipment types and number and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, also the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be

categorized by work phase. Table 4.13-6, Noise Levels  $(L_{max})$ , lists typical construction equipment noise levels recommended for noise impact assessments, based on a reference distance of 50 feet from the equipment noise source.

Type of Equipment	Impact Device? (Yes/No)	Acoustical Usage Factor	(dBA L <sub>max</sub> at 50 feet)			
Boom Truck <sup>a</sup>	No	50	85			
Compactor (ground)	No	20	80			
Concrete Mixer Truck	No	40	85			
Concrete Pump Truck	No	20	82			
Crane	No	16	85			
Dozer	No	40	85			
Drill Rig Truck	No	20	84			
Excavator	No	40	85			
Flatbed Truck	No	40	84			
Forklift <sup>a</sup>	No	50	85			
Grader	No	40	85			
Grapple (on backhoe)	No	40	85			
Loader/Backhoe	No	40	80			
Mounted Impact Hammer (hoe ram)	Yes	20	90			
Pneumatic Tools	No	50	85			
Roller	No	20	85			
Scraper	No	40	85			
Trenching Machine <sup>a</sup>	No	50	85			
Water Truck <sup>a</sup>	No	50	85			
<sup>a</sup> Used FHWA type "All Other Equipme	ent > 5 HP."					
SOURCE: FHWA, Highway Construction Noise Handbook, August 2006.						

TABLE 4.13-6: NOISE LEVELS (L<sub>MAX</sub>)

The site preparation phase may include removal of vegetation and top soil, compactions of subgrade, and shaping of ditches and swales. This phase tends to generate the highest noise levels during construction as the heavy equipment needed for earthmoving collectively generates the highest noise levels (other than impact equipment such as impact pile driving. This site preparation phase is expected to require a maximum daily use of dozers, water trucks, graders, flatbed trucks, skid steer, front-end loaders, roller-compactors, pickups, backhoe, foundation delivery truck, module delivery truck, tracker delivery truck, concrete truck, and gravel trucks. As shown in Table 4.13-6, the maximum noise levels for construction equipment used for construction of the project ranges from approximately 80 to 90 dBA  $L_{max}$  at 50 feet.

Trenching would be required for placement of underground electrical and communications lines and may include the use of trenchers, backhoes, excavators, haul vehicles, compaction equipment and water trucks. After preparation of the site, the pads for structures, equipment enclosures and equipment vaults would be prepared per geotechnical engineer recommendations.
The PV system installation phase of project construction would include the installation of the mounting and support structures. The structure supporting the PV module arrays at the project site would consist of cylindrical steel pipes, which would be driven into the soil using pneumatic techniques, similar to a hydraulic impact hammer attachment on the boom of a rubber-tired backhoe excavator.

The final phase of construction includes installation of underground electrical cables collection system and construction of the inverters, and potential battery storage facility. If required, the onsite switchyard area would be excavated for the transformer equipment and control house foundation, and oil containment area.

Project construction would occur in accordance with all federal, State, and Kern County zoning codes and requirements. Site preparation would be consistent with Kern County's best management practices (BMPs). Noise generating construction activities would be limited to the allowable Kern County construction hours noted above. Stationary equipment and machines with the potential to generate a substantial increase in noise or vibration levels would be located away from noise sensitive receptors to minimize potential noise levels.

#### Construction Traffic Noise

Construction would also generate offsite noise from vehicle traffic. Noise from daily construction worker commute trips and truck trips would affect surrounding traffic noise levels along roadways used to access the project site. A doubling of a noise source (e.g., vehicle traffic) is required to result in a perceptible (3 dBA or greater) increase in the resulting traffic noise level. Offsite construction noise levels are assessed based on the potential to result in a perceptible change in traffic-related noise levels.

#### **Decommissioning Noise**

The project facility has an anticipated life of 35 years, after which the project proponent of the facility may choose to update the site technology and re-commission, or decommission and remove the systems and their components. If decommission occurs, activities associated with decommissioning would be similar or lower than the noise levels experienced under the worst case construction activities. Therefore, impacts from decommissioning are anticipated to be identical to or less than those occurring during construction.

# **Operational Stationary-Source Noise**

Predicted noise levels associated with onsite stationary noise sources and activities were calculated based on representative data obtained from existing literature and noise assessments prepared for similar projects. Operational noise levels were predicted assuming an average noise-attenuation rate of 6 dB per doubling of distance from the source and an excess noise-attenuation rate of 1.5 dB per 1,000 feet. Operational noise levels were calculated at the project site property lines and nearby land uses for comparison to the County noise standards.

A noise model of the project has been developed using the CADNA/A noise model by DataKustik GmbH of Munich, Germany. The CADNA/A noise model is capable of modeling very complex industrial plants. The sound propagation factors used in the model have been adopted from International Organization for Standardization (ISO) 9613-2, *Acoustics – Sound Attenuation during Propagation Outdoors* (Jacobs, 2019).

The model divides the proposed facility into a list of individual noise sources representing each piece of equipment that produces a significant amount of noise. Using these noise levels as a basis, the model calculates the noise level that would occur at each receptor from each source after losses from distance, air

absorption, enclosures and blockages are considered. The sum of all these individual levels is the total plant level at the modeling point.

Reference sound levels for various pieces of equipment were incorporated into the acoustical model. The model assumes the following reference noise levels:

- Inverters: 64 dBA at 33 feet
- Battery Energy Storage System: 74 dBA at 33 feet
- Transformers: 65 dBA at 3 feet
- Substation Step-up Transformer: 85 dBA at 3 feet

# **Operational Traffic Noise**

The project would not have any on-site staff during its operational period. The project site would be visited intermittently by maintenance staff on a weekly basis (less than four trips a week) to perform maintenance duties, which would include periodic inspection, maintenance, and repair of the solar arrays. Panel washing would be conducted twice per year, with maintenance staff travelling to the project site over a 10-day period per occurrence. It is expected that panel washing will require up to 24 worker commute trips per day and 66 haul truck trips per day for the transport of water to the project site.

### **Construction Groundborne Vibration**

Groundborne vibration is almost exclusively a concern for buildings and its inhabitants, and is rarely perceived as a problem outdoors, where the motion may be discernable, but without the effects associated with the shaking of a building there is less adverse reaction. Groundborne vibration during construction activity is temporary and would cease to occur after project construction is completed. **Table 4.13-7**, *Vibration Source Amplitudes for Construction Equipment*, shows the vibrational levels for typical construction equipment at a reference distance of 25 feet.

Groundborne vibration may be induced by traffic and construction activities, such as earthmoving. The project would require the use of a crane, excavator, grader, vibratory roller, scraper, tractor/loader/backhoe, trencher, and post driver, which generate vibration. The erection of the solar arrays would include support structures that may need to be driven into the soil using post drivers, which could cause localized vibrations. Of these, the vibratory roller would generate the highest vibration level, 0.210 in/sec PPV at 25 feet, as shown in Table 4.13-7.

Given this large distance, effects from construction vibrations are not anticipated to impact these receptors.

The project's constructed facilities would not include sources of vibration. Operation of the project would involve mostly regular maintenance trucks accessing the project site (0.076 in/sec PPV) and panel washing activities (not measurable) at a sufficient distance from structures (i.e., over 100 feet away from structures), project-related vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers. In addition, as previously discussed, the closest existing residence is over 2.5 miles away. Given this large distance, effects from any vibration generated during operation of the project are not anticipated to impact these receptors. Therefore, there would be no operational vibration impacts.

	<b>Reference PPV/Lv at 25 Feet</b>		
Equipment	PPV (in/sec)	Lv (VdB) <sup>a</sup>	
Pile Driver (Impact), Typical	0.644	104	
Pile Driver (Sonic), Typical	0.170	93	
Post Driver <sup>b</sup>	0.161	92	
Vibratory Roller	0.210	94	
Hoe Ram	0.089	87	
Large Bulldozer <sup>c</sup>	0.089	87	
Caisson Drilling	0.089	87	
Loaded Trucks	0.076	86	
Jackhammer	0.035	79	
Small Bulldozer	0.003	58	

TABLE 4.13-7:	<b>VIBRATION SOURCE</b> A	<b>AMPLITUDES FOR</b>	CONSTRUCTION E	OUIPMENT
I ADLL T.IJ-/.		AND LITUDES FOR	CONSTRUCTION L	

NOTES:

<sup>a</sup> RMS vibration velocity in decibels (VdB) re 1 µin/sec.

<sup>b</sup> Calculated based on a reference level of 0.65 in/sec PPV for a 36,000 foot-pounds (ft-lbs) pile driver and a maximum energy level of 2,200 ft-lbs for post drivers.

 $L_{V} =$  velocity in decibels

<sup>c</sup> Equipment shown in **bold** is expected to be used on the project site.

 $\mu$ in/sec = micro-inches per second

Let the second sec	
FTA = Federal Transit Administration	PPV = peak particle velocity
in/sec = inches per second	RMS = root-mean-square
	VdB = vibration velocity in decibels

SOURCE: FTA, 2018

### **Operational Vibration Impacts**

Operation of the project would involve minor operational traffic, including regular maintenance truck (generating approximately 0.076 in/sec PPV), and panel washing activity (not measurable), as these activities are periodic and not expected to occur on a regular daily basis, the project would not generate a substantial amount of operational-related vibration. As such, the projects operational impacts are discussed qualitatively in this analysis.

# **Thresholds of Significance**

The Kern County California Environmental Quality Act (CEQA) Implementation Document and Kern County Environmental Checklist identify the following criteria, as established in *CEQA Guidelines* Appendix G, to determine if a project could potentially have a significant adverse effect on noise.

A project would have a significant impact on noise if it would result in:

- a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- b. Generation of excessive 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.

### **Noise Levels in Excess of Standards**

Temporary noise impacts associated with the project would be associated with short-term construction activities, which would include the use of various types of equipment commonly associated with site preparation, grading, access corridors, infrastructure, and solar array construction. Short-term construction noise impacts would be considered to have a significant impact if construction would exceed applicable noise standards or result in substantial increases in ambient noise levels at the nearest noise-sensitive land uses during the more noise-sensitive evening and nighttime hours.

Per the requirements of Kern County Code of Ordinances, Noise Control, Chapter 8.36, noise-generating construction activities that are audible to a person with average hearing ability at a distance of 150 feet from the construction site, or within 1,000 feet of an occupied residential dwelling are typically prohibited between the hours of 9 p.m. to 6 a.m. on weekdays, and between 9 p.m. to 8 a.m. on weekends. 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  $L_{dn}$ . As such, operational noise impacts from stationary equipment are assessed by determining if the project would result in a substantial increase in ambient noise levels that would exceed the applicable County noise standards at the outdoor activity area of the nearest noise-sensitive land use.

### Substantial Increases in Ambient Noise Levels

For short-term construction activities, an increase in noise of 3 dBA or more is used as a significance threshold. For operational activities, the exterior noise standard for residential uses of 65 dBA  $L_{dn}$  is the standard of significance.

### **Exposure to Groundborne Vibration**

For the purposes of assessing potential groundborne vibration impacts associated with the 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 project would exceed the recommended criteria for structural damage or human annoyance (i.e., 0.25 and 0.1 in/sec PPV, respectively) at the nearest offsite existing structure (refer to Tables 4.13-4 and 4.13-5). These thresholds are considered to represent a conservative level at which construction-related activities would result in either structural damage or human annoyance.

# **Project Impacts**

Impact 4.13-1: The project would result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

#### Construction

As discussed under Section 4.13.2, *Environmental Setting*, existing noise in the project area was provided in the *Noise Study for the Pastoria Solar Project* (Jacobs, 2019) provided in Appendix L of this EIR. Measurements conducted had average noise levels ranging from 49 to 58 dBA  $L_{dn}$ . As discussed in further detail below, with project construction noise levels at the nearest residence (located approximately 2.5 miles/13,200 feet away) attenuating to well below the ambient noise levels, project construction would not cause a temporary or periodic increase in ambient noise levels during the construction. Construction activities associated with the proposed project would generally occur during the daytime hours as specified in the Kern County Code of Ordinances, Chapter 8.36, Noise Control. Therefore, impacts would be less than significant.

Furthermore, activities associated with a potential decommissioning of the project would result in similar or lower noise levels than those that would be experienced under the loudest phases of construction. Therefore, decommissioning activity noise levels would be less than significant.

#### **Construction Traffic**

During project construction, the sensitive receptors located along the construction traffic route would be exposed to vehicle traffic noise associated with project-related construction traffic on local roadways. Traffic noise from daily trips by construction workers commuting to the project site would contribute to the existing traffic noise levels along access routes, potentially increasing traffic noise levels. Construction-generated vehicle traffic would include a mix of light-duty automobiles and trucks and heavy-duty trucks. According to the *Traffic Study for the Pastoria Solar Project, Kern County, California* (Jacobs, 2019) provided in Appendix M of this Draft EIR, there would be an average of 190 workers per day during construction, with a maximum of approximately 400 workers per day at the peak of construction and an estimated 5 to 10 delivery trucks per day. Up to 16 percent of construction workers may carpool to the site (64 workers at the maximum workforce of 400), which would result in an adjusted 336 maximum number of passenger vehicles during construction-related trips are anticipated to occur during the morning peak (7 to 9 a.m.) and afternoon peak (4 to 6 p.m.) periods Monday through Friday for 12 months. It is assumed that the workers will arrive in the A.M. peak period and leave during the P.M. peak period each day.

To experience a perceptible increase (i.e., 3 dBA) in traffic noise levels, vehicle traffic would have to double due to project construction traffic. A 5 dBA increase is typically considered a substantial traffic noise increase. Average daily traffic volumes under the Existing and Existing Plus Project Construction conditions is summarized in **Table 4.13-8**, *Existing and Project Construction Volumes*. As shown in Table 4.13-8, project construction traffic would not double existing traffic on project roadways. Therefore, project's construction traffic would not result in a substantial increase in average daily traffic noise levels and impacts would be less than significant.

Roadway	Existing Traffic Volumes	Project Construction Trip Distribution	Existing plus Project Construction Volumes
I-5 (north of Grapevine Interchange)	41,500	96	41,596
I-5 (south of Grapevine Interchange)	41,500	35	41,535
Grapevine Road East	2,010	162	2,172
Grapevine Road West	2,251	183	2,434
SOURCE: Jacobs, 2019			

#### TABLE 4.13-8: EXISTING AND PROJECT CONSTRUCTION VOLUMES

#### **Construction Activities**

Construction activities at the project site are expected to be typical of other solar power facilities in terms equipment used and other types of activities performed. With the exception of the removal of onsite cattle feeding/watering stations, there are no demolition activities associated with the construction of the project. Construction activities at the project site are anticipated to last 12 months, approximately 2021 to 2022. Construction is scheduled to commence in 2021 and will likely be completed in 2022–2023.

The noise level will vary during the construction period, depending on the activities being performed. Project construction would occur in specific phases, each of which has its own mix of equipment types and number and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, also the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. The greatest project construction noise would be generated primarily from the following three phases: site preparation, construction, and installation and testing of the solar panels on the project site.

Site preparation may include removal of vegetation and top soil, compactions of subgrade, and shaping of ditches and swales. The photovoltaic (PV) system installation phase of project construction would include the installation of the mounting and support structures. The structure supporting the PV module arrays at the project site would consist of cylindrical steel pipes, which would be driven into the soil using pneumatic techniques, similar to a hydraulic impact hammer attachment on the boom of a rubber-tired backhoe excavator.

The USEPA Office of Noise Abatement and Control, and the Empire State Electric Energy Research Company have extensively studied noise from individual pieces of construction equipment and power plant construction (Jacobs, 2019). Given the dynamic nature of construction activities and because specific information on the types, quantities, and operating schedules of construction equipment is not available at this point in the project development, information from these documents for larger more complex power facilities are used to estimate noise from construction.

The loudest equipment types generally operating at a site during each phase of construction are presented in **Table 4.13-9**, *Construction Equipment and Composite Site Noise Levels*. The composite average or equivalent site noise level, representing the average sound level for each phase is also presented in Table 4.13-9 and **Table 4.13-10**, *Average Construction Noise Levels at Various Distances*, which estimate average sound levels at various distances. At times, actual sound levels may exceed the long-term average sound levels as precise estimates of construction noise levels are challenging to make given the dynamic nature of construction activities.

Construction Phase	Loudest Construction Equipment	Equipment Noise Level (dBA) at 50 Feet	Composite Site Noise Level (dBA) at 50 Feet	
Demolition, Site Clearing,	Dump Truck	91	89	
and Excavation	Backhoe	85		
Steel Erection	Derrick Crane	88	87	
	Jack Hammer	88		
Mechanical	Derrick Crane	88	87	
	Pneumatic Tools	86		
SOURCE: EPA, 1971; Barnes et al., 1976.				

#### TABLE 4.13-10: AVERAGE CONSTRUCTION NOISE LEVELS AT VARIOUS DISTANCES

	Noise Level (dBA)		
Construction Phase	At 375 Feet	At 1,500 Feet	At 3,000 Feet
Demolition, Site Clearing, and Excavation	71	59	53
Concrete Pouring	60	48	42
Steel Erection	69	57	51
SOURCE: Jacobs, 2019.			

For the purpose of this analysis, the composite hourly average noise levels for the multiple equipment items associated with each of the three construction activity phases were calculated at a reference distance of 50 feet for use in estimating the noise levels at sensitive off-site receptors. Table 4.13-9, provides estimated hourly average noise levels of multiple pieces of construction equipment associated with project construction phases. Table 4.13-10 estimates average sound levels at various distances for different construction phases.

As shown below in Table 4.13-10, sound attenuates with distances at a rate of 6 dBA per a doubling of distance over soft surfaces, such as the flat valley floor in the project area, therefore, as the distance to the closest existing residence exceeds 2.5 miles (13,200 feet), noise impacts would be less than significant during construction of the project. However, implementation of Mitigation Measures MM 4.13-1, MM 4.13-2, and MM 4.13-3 would further reduce impacts from construction of the project.

#### Operation

#### **Operational Traffic**

During project operation, one to two employees would be onsite intermittently every month (less than four trips a week) to perform maintenance duties, which would include periodic inspection, maintenance, and repair of the solar arrays. Vehicle trips associated with these maintenance employees would not create a substantial increase of vehicular noise along access roads to the project site. Maintenance required during operation of the project would not result in a doubling of the traffic volumes on roadways accessing the project site, and therefore, the noise level increase would be substantially below the perceptible level of a 3 dBA increase.

The project would also require bi-annual washing of the solar panels that would be typically carried out over a period of 10 days, which are expected to generate approximately 24 worker commute trips per day and 66 haul truck trips per day for the transport of water to the project site. Based on existing traffic provided in Table 4.13-8, Project operation would not double existing traffic on project roadways. Therefore, project's traffic associated with bi-annual washing of the solar panels during operation would not result in a substantial increase in average daily traffic noise levels and impacts would be less than significant.

Based on the above, operational traffic noise levels from operation of the project would be minimal, and impacts would be less than significant.

#### **Electrical Collector System and Inverters**

The direct current (DC) power generated by the solar arrays would be transmitted using electric lines held in cable trenches or above ground cable trays to the inverters where the power would be converted to alternating current (AC) power for delivery to the grid. The inverters are housed within an enclosed structure, which helps to reduce the resulting operational noise levels. The acoustical analysis is based on a reference sound level of 64 dBA at 33 feet for inverters.

#### Battery Energy Storage System

The project would install a 80 megawatt (MW) Battery Energy Storage System (BESS) and associated infrastructure that would provide energy storage capacity for the electric grid. The system is proposed to be located adjacent to the onsite collector substation and would include rechargeable battery packs, a Battery Management System (BMS), a Thermal Management System (TMS), grid-tied bi-directional inverters, step-up transformers, and required Supervisory Control and Data Acquisition (SCADA) devices, which would all work together as a single system. The lithium ion energy storage batteries would be housed in a structure or within conex boxes. The BESS would either be collocated within or adjacent to the proposed substation or distributed throughout the project' solar arrays by collocating a single BESS container with each of the project's block inverters, with the BESS and the inverter housed in the same container. In the event a single structure is constructed near the onsite substation, a height (including any screening for heating, ventilation, and air conditioning (HVAC) of approximately 30 feet is anticipated as a worst-case scenario. Depending on the size, noise from HVAC equipment could range from 72 dBA to 78 dBA at 30 feet (Trane, 2002). The HVAC would be housed in a structure that would help to reduce resulting operational noise from the HVAC.

#### **Electrical Transmission Lines**

One of the electrical effects of high-voltage transmission lines is corona. Corona is the ionization of air at the surface of the energized conductor and suspension hardware due to very high electric field strength at the surface of the metal during certain conditions. Corona may result in radio and television reception interference, audible noise, light, and production of ozone. Corona is a concern with transmission lines of 345 kV and greater and with lines that are at higher elevations. Higher levels of corona noise are also associated with rain, fog, or foul weather conditions.

No off-site electrical transmission components of 345 kV or higher are proposed as part of the project. The project contains a 220-kV generator tie-in line which will run approximately 0.5 miles offsite to the PEF. Therefore, the audible noise associated with the 220-kV lines and switchyards in the area is not expected to change and will not result in any significant noise impacts.

As depicted in **Figure 4.13-4**, *Noise Contour Map*, the sound level decreases with distance from the facility. The operational sound level (in other words, noise attributable to the project) at the closest existing residence is predicted to be less than 35 dBA  $L_{eq}$ , equivalent to an  $L_{dn}$  of 41 dBA. This is less than the existing  $L_{dn}$  and less than the County Noise Ordinance standards of 65 dBA exterior ( $L_{dn}$ ) and 45 dBA interior ( $L_{dn}$ ). The project would therefore not result in any significant noise impacts and would not violate County noise ordinances or standards.



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.13-4: NOISE CONTOUR MAP

#### Decommissioning

Activities associated with a potential decommissioning of the project would result in similar or lower noise levels than those that would be experienced under the loudest phases of construction. Therefore, decommissioning activity noise levels could result in disturbances of noise sensitive receptors in the project vicinity similar to those during the loudest construction phases. However as described above, sound attenuates with distances at a rate of 6 dBA per a doubling of distance over soft surfaces, such as the flat valley floor in the project area, therefore, as the distance to the closest existing residence exceeds 2.5 miles (13,200 feet), noise impacts would be less than significant during decommissioning of the project. However, implementation of Mitigation Measures MM 4.13-1, MM 4.13-2, and MM 4.13-3 would further reduce impacts from decommissioning of the project.

#### **Mitigation Measures**

- **MM 4.13-1:** The following measures are to be implemented to further reduce short-term noise levels associated with project construction and decommissioning:
  - a. 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.
  - b. Construction and decommissioning activities at the project site shall comply with the hourly restrictions for noise-generating construction activities, as specified in the County's Code of Ordinances, Chapter 8.36. Accordingly, construction activities shall be prohibited between the hours of 9 p.m. to 6 a.m. on weekdays, and between 9 p.m. to 8 a.m. on weekends. These hourly limitations shall not apply to activities where hourly limitations would result in increased safety risk to workers or the public, such as commissioning and maintenance activities that must occur after dark to ensure photovoltaic arrays are not energized, unanticipated emergencies requiring immediate attention, or security patrols.
  - c. 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).
  - d. Onsite vehicle speeds shall be limited to 15 miles per hour, or less (except in cases of emergency).
  - e. Back-up beepers for all construction equipment and vehicles shall be broadband sound alarms or adjusted to the lowest noise levels possible, provided that the Occupational Safety and Health Administration and California Division of Occupational Safety and Health's safety requirements are not violated. On vehicles where back-up beepers are not available, alternative safety measures such as escorts and spotters shall be employed.
- **MM 4.13-2:** The construction contractor shall establish a Noise Disturbance Coordinator for the project during construction and decommissioning. The Noise Disturbance Coordinator shall be responsible for responding to any complaints about construction noise. The Noise Disturbance Coordinator shall determine the cause of the complaint and shall be required to implement reasonable measures to resolve the complaint. Contact information for the Noise Disturbance Coordinator shall be submitted to the Kern County Planning and Natural Resources Department prior to commencement of any ground disturbing activities.

- **MM 4.13-3:** Prior to commencement of any onsite construction activities (i.e., fence construction, mobilization of construction equipment, initial grading, etc.) including decommissioning, the project proponent/operator shall provide written notice to the public through mailing a notice, which shall include:
  - a. The mailing notice shall be mailed to all residences within 1,000 feet of the project site, 15 days or less prior to construction activities. The notices shall include the construction schedule and a telephone number and email address where complaints and questions can be registered with the noise disturbance coordinator.
  - b. A minimum of one sign, legible at a distance of 50 feet, shall be posted at the construction site, or adjacent to the nearest public access to the main construction entrance, throughout construction activities that shall provide the construction schedule (updated as needed) and a telephone number where noise complaints can be registered with the noise disturbance coordinator.
  - c. Documentation that the public notice has been sent and the sign has been posted shall be provided to the Kern County Planning and Natural Resources Department.
  - d. Prior to commencing decommissioning, the project owner shall follow the mailing, signage, and documentation requirements in MM 4.13-3 above.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.13-1, MM 4.13-2, and MM 4.13-3 temporary impacts associated with construction and decommissioning would be less than significant. Operational impacts would be less than significant.

# Impact 4.13-2: The project would generate excessive groundborne vibration or groundborne noise levels.

As discussed above, Table 4.13-7, shows the vibrational levels for typical construction equipment at a reference distance of 25 feet. The project would require the use of a crane, excavator, grader, vibratory roller, scraper, tractor/loader/backhoe, trencher, and post driver, which generate vibration. The erection of the solar arrays would include support structures that may need to be driven into the soil using post drivers, which could cause localized vibrations. Of these, the vibratory roller would generate the highest vibration level, 0.210 in/sec PPV at 25 feet, as shown in Table 4.13-7. However, these levels would decrease significantly with increased distance from the source; assuming a maximum level of 0.21 in/sec PPV, groundborne vibration levels would decrease to approximately 0.05 in/sec PPV at approximately 75 feet. Therefore, groundborne vibration levels at the nearest residential structures, which are located in excess of 75 feet from the project site, would not exceed applicable thresholds for structural damage or human annoyance (i.e., 0.25 and 0.1 in/sec PPV, respectively).

Given this large distance, effects from construction vibrations are not anticipated to impact these receptors.

The project's constructed facilities would not include sources of vibration. Operation of the project would involve mostly regular maintenance trucks accessing the project site (0.076 in/sec PPV) and panel washing activities (not measurable) at a sufficient distance from structures (i.e., over 100 feet away from structures), project-related vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers. In addition, as previously discussed, the closest existing residence is over

2.5 miles away. Given this large distance, effects from any vibration generated during operation of the project are not anticipated to impact these receptors. Therefore, there would be no operational vibration impacts.

#### **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.

As discussed under Impact 4.13-1, project operational noise levels would not result in any permanent significant increase in ambient noise levels. Once constructed, the proposed project would operate continuously, seven days per week. Noise generated by project operations would be predominantly associated with the onsite operation of transformers, inverters, substations, and power conversion stations. The proposed gen-tie line would result in electrical discharge (corona discharge) noise that would not be perceptible above background noise levels at the nearest sensitive receptor. Operational traffic noise levels from operation of the project would be minimal and consequently, the permanent noise level increase would be substantially below the perceptible level of a 3 dBA increase. Therefore, there would not be any potentially significant increase in ambient noise levels.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

# 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 nearest public airport to the project site is the Bakersfield Municipal Airport, located approximately 24 miles north of the project site. The project is not located within the sphere of influence of any airport as identified by the Kern County Airport Land Use Compatibility Plan, 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**

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 are listed in Chapter 3, *Project Description*, Table 3-3, *Cumulative Projects List*. The two cumulative projects listed are within 1 mile of the project site and include a surface mining expansion project, located approximately 0.75 miles east of the project site, and the Grapevine Specific & Community Plan, the closest portion of which is located approximately 0.85 miles south of the project site.

The Grapevine Specific & Community Plan is a planned community development that includes up to 12,000 residential units and 5,100,000 square feet of commercial uses, that would be built out over time. Kern County approved the Grapevine Specific & Community Plan in 2019. The project construction under the approved Grapevine Specific & Community Plan has not started but is considered by the County to be a 'reasonably foreseeable' cumulative analysis project for Pastoria Solar. An existing agricultural road will be paved as part of Grapevine Specific & Community Plan through the center of the Pastoria Solar Project from Edmonston Pumping Plant Road so that gravel and agricultural hauling truck traffic can avoid new residential areas south of Edmonston Pumping Plant Road.

Potential cumulative noise impacts from construction and/or operation of the project are not expected to differ from those of the project alone. Noise attributable to the project would be approximately 30 dBA at the loudest, in the Grapevine Specific & Community Plan Area after construction. The project will therefore have a less-than-significant noise effect in the immediate vicinity of the project site and would not increase noise levels within the Grapevine Specific & Community Plan Area. Other pending projects identified by Kern County have not been identified as substantial sources of noise in the immediate project vicinity. Further, given the rural location and insignificant levels of noise expected from the project and distance from sensitive receptors, the potential incremental noise impacts from the project would not, even when combined with other pending and existing projects, result in significant cumulative impacts from noise. Furthermore, these project's contribution to potential cumulative noise impacts are, therefore, expected to be less than significant.

With regard to vibration impacts, as discussed above, the closest existing residence is over 2.5 miles away. Given this large distance, effects from vibration generated during construction or operation are not anticipated to impact these receptors. Therefore, cumulative impacts would be less than significant.

As decommissioning activities would result in similar noise and vibration levels identified for the construction of the project, cumulative impacts during decommissioning activities would be less than significant for noise and vibration.

As discussed above, the project is not located within the sphere of influence of any airport as identified by the Kern County Airport Land Use Compatibility Plan. Therefore, cumulative impacts would be less than significant.

### **Mitigation Measures**

Mitigation Measures MM 4.13-1 through MM 4.13-3 would be required.

# Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.13-1 through MM 4.13-3, impacts would be less than significant.

This page intentionally left blank

# 4.14.1 Introduction

This section of the EIR describes the affected environment and regulatory setting pertaining to public services, which include fire and law enforcement 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, 6 dozers, 2 helicopters, 2 hazardous material response teams, and other ancillary vehicles and equipment. KCFD is staffed with 625 permanent employees, which includes 546 uniformed firefighters (KCFD, 2019a). KCFD has experienced several budget and staffing cuts in recent years and was operating on a \$7.5-million deficit going into the 2018–2019 fiscal year (Barnwell, 2018).

The project site is located at the southern end of the San Joaquin Valley in central California. The project site is located within Battalion 5, Mt. Pinos Communities, which serves the extreme south/southwest portion of the County and is bordered by Los Angeles County and Ventura County. Battalion 5 consists of seven stations (KCFD, 2018) and covers a State Responsibility Area (SRA) land area of nearly 296,467 acres, for which the California Department of Forestry and Fire Protection (CAL FIRE) has a legal responsibility to provide fire protection for this SRA land area. The SRA land area is bounded by the Tehachapi Mountains on the east, agricultural lands the in the center, and a portion of the Los Padres National Forrest to the west (KCFD, 2011). Fire Station No. 55 (Tejon Ranch), located at 5441 Dennis McCarthy Drive, is approximately 10 miles to the southeast 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. 56 (Lebec), located at 1545 Lebec Service Road, and Fire Station No. 57 (Stallion Springs), located at 729 W End Drive. Information on the three closest fire stations to the project site is included in Table 4.14-1, *List of Nearby Fire Stations*, below. In rural county areas like the project site, the average response time is approximately 11 minutes (Center for Public Safety and Land Management [CPSM], 2017).

The project site is identified as a Local Responsibility Area (LRA) by the County and CAL FIRE. The KCFD Wildland Fire Management Plan designates a majority of the project site as being located within an Agriculture/Non-Wildland zone by the County with a small area of the eastern parcels and gen-tie lines

within a moderate fire hazard severity zone (KCFD, 2009). The project site is designated LRA Unzoned by CAL FIRE (CAL FIRE, 2012 and 2007/8).

The south-western quadrant of the project site is subject to Right of Way easement (license), recorded September 11, 1940, in Book 954 of Official Records page 354 Kern County Records, for the purpose of construction of a fire suppression road. Upon consultation with the KCFD, there are no current or future plans to construct a fire suppression road within the project boundary.

Kern County applies and utilizes the National Fire Code set forth by the National Fire Protection Association, the California Fire Code, the California Building Code, and the Kern County Ordinance Code to regulate fire safety.

The Kern County Emergency Medical Services Division (EMS) is the lead agency for the EMS system in Kern County and is responsible for coordinating all system participants in the County, which includes the public, fire departments, ambulance companies, other emergency service providers, hospitals, and Emergency Medical Technician (EMT) training programs throughout the County. The EMS includes a system of services organized to provide rapid response to serious medical emergencies, including immediate medical care and patient transport to a hospital setting. EMS covers day-to-day emergencies, disaster medical response planning and preparation, and preventative health care. The department also provides certification and recertification for EMTs, paramedics, specialized nurses, and specialized dispatchers. The closest hospital to the project site is the Mercy Hospital Downtown – Bakersfield, located at 2215 Truxtun Avenue, Bakersfield, approximately 39.5 miles north of the project site. The next closest hospital to the project site is the Mercy Hospital Southwest-Bakersfield, located at 400 Old River Road, Bakersfield, approximately 40.6 miles north of the project site.

An inventory of fire facilities in the project area is provided below in **Table 4.14-1**, *List of Nearby Fire Stations*. The table identifies each type of facility, the name and address of the facility, and the approximate distance from the project site.

Agency	Facility	Address	Approximate Distance from Project Site
KCFD	Fire Station No. 55	5441 Dennis McCarthy Drive Lebec, CA 93243	10.0 miles northwest of project site
KCFD	Fire Station No. 56	1548 Lebec Service Road Lebec, CA 93243	20.6 miles north of project site
KCFD	Fire Station No. 57	729 W End Drive Frazier Park, CA 93225	28.0 miles north of project site

 TABLE 4.14-1:
 LIST OF NEARBY FIRE STATIONS

# Law Enforcement Protection

### Kern County Sheriff's Department

The Kern County Sheriff's Office (KCSO) provides basic law enforcement services in the unincorporated areas of the County, which includes the project area. The KCSO enforces local, State, and federal laws and is responsible for crime prevention, field patrol (ground and air), crime investigation, the apprehension of offenders, regulation of noncriminal activity, and related support services such as, patrolling off-highway

vehicle recreation areas in the desert and mountainous areas of the County. Traffic and parking control functions are also provided along with some investigation of property damage reports and traffic accidents. Complete investigations are conducted for injury, fatal, intoxication-related, and hit-and-run accidents.

The KCSO is currently staffed with 1,202 sworn and civilian employees, 567 deputy sheriffs, 338 detention deputy positions, and 297 professional support staff (KCSO, 2019a). The headquarters for the KCSO is located at 1350 Norris Road in the city of Bakersfield. The KCSO consists of 14 substations that provide patrol services (KCSO, 2019b). The nearest substation that would provide service to the project site is the Frazier Park substation located approximately 26.2 miles southwest of the project site, at 617 Monterey Trail, Suite C in the community of Frazier Park. This substation provides services to approximately 10,000 residents in the mountain communities of Kern County, including: Frazier Park, Fort Tejon, Grapevine, Lake-of-the-Woods, Lebec, Los Padres Estates, Pine Mountain Club, and Pinon Pines (KCSO, 2018c). Other substations in proximity to the project site include the Lamont substation and Tehachapi substation. Information on three closest substations to the project site is included in **Table 4.14-2**, *List of Nearby Police Substations*.

Agency	Facility	Address	Approximate Distance from Project Site
KCSO	Frazier Park Substation	617 Monterey Trail, Suite C Frazier Park, CA 93225	26.2 miles southwest of the project site
KCSO	Lamont Substation	12022 Main Street Lamont, CA 93241	26.5 miles northeast of the project site
KCSO	Tehachapi Substation	22209 Old Town Road Tehachapi, CA 93581	49.1 miles northeast of the project site

<b>TABLE 4.14-2:</b>	LIST OF	'NEARBY I	POLICE SUBSTATIONS
----------------------	---------	-----------	--------------------

The KCSO strives to respond to calls as quickly as possible. Life-threatening calls that involve a danger to someone's personal safety are given priority. Response time is defined as the time required to respond to a call for service, measured from the time a call is received until the time a patrol car arrives at the scene. Average response time for the KCSO is 5 minutes or less for an emergency or immediate-response incident (e.g., a crime that is in progress and/or a life-or-death situation) and 8 to 10 minutes for routine calls (e.g., a crime that has already occurred and/or an incident that is not life-threatening).

Response time to an emergency at or near the project site would vary depending on the level of demand at the substation at the time of the call. If demand is high, the response time would be longer than the average times given above. The response time for a non-emergency call could be 8 minutes or more, depending on staffing and the number of other calls for service.

# California Highway Patrol

As a major statewide law enforcement agency, the California Highway Patrol (CHP) is responsible for managing and regulating traffic for the safe, lawful, and efficient use of California highways. The CHP patrols state highways and all county roadways, enforces traffic regulations, responds to traffic accidents, and provides service and assistance to disabled vehicles. The CHP has a mutual aid agreement with KCSO.

The CHP is divided into eight divisions that provide services in areas of California (CHP, 2019a). The project site is within the jurisdiction of the Central Division, which includes the encompasses the heart of the San Joaquin Valley with two long freeway segments, a 244-mile stretch of State Route (SR-) 99 and a

275-mile stretch of Interstate (I-) 5, which run the flat length of the Division (CHP, 2019b). The nearest CHP office to the project site is the Central Division located at 1033 Lebec Road in the community of Lebec, approximately 22.3 miles southwest of the project site.

# Schools/Parks/Other Public Facilities

The project site is located within the General Shafter Elementary School District (GSESD), which consists of a single elementary school (Kern County Superintendent of Schools, 2015). This school serves 159 students in kindergarten through Grade 8 and is supported by 19 staff members (GSESD, 2019). Other school districts located in the vicinity include Arvin Union Elementary School District, El Tejon Unified, Maricopa Unified, Lakeside Union Elementary School District, and Greenfield Union Elementary School, which include 27 other school facilities (Kern County Superintendent of Schools, 2010 and 2019). The closest school to the project site is the El Tejon Elementary School, located approximately 5 miles south of the project site.

The Kern County Parks and Recreation Department manages an extensive system of large regional parks designed to serve the entire countywide population, and small neighborhood and community parks intended primarily to meet the recreational needs of nearby residents in unincorporated communities. Kern County Parks & Recreation manages 8 regional parks, totaling 4,282 acres, and 40 neighborhood parks, totaling 293 acres.

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, 2019). Additionally, there are currently 37 post offices that serve the County (United States Postal Service [USPS], 2019). Furthermore, there are currently 12 facilities serving the Superior Court of California in Kern County (Superior Court of California, 2019).

# 4.14.3 Regulatory Setting

# Federal

There are no applicable federal regulations for this issue area.

# State

# California Fire Code

The 2016 California Fire Code 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 (CAL FIRE)**

Under Title 14 of the California Code of Regulations (CCR), CAL FIRE has the primary responsibility for implementing wildfire planning and protection for SRAs. CAL FIRE develops regulations and issues fire-safe clearances for land within a fire district of the SRA. More than 31 million acres of California's privately owned wildlands are under CAL FIRE's jurisdiction.

CAL FIRE adopted Fire Hazard Severity Zone maps for the SRAs in November 2007. Fire Hazard is a way to measure the physical fire behavior so that people can predict the damage a fire is likely to cause. Fire hazard measurement includes the speed at which a wildfire moves, the amount of heat the fire produces, and, most important, the burning fire brands that the fire sends ahead of the flaming front. The project site is located within an area of moderate fire hazard severity zone and within an SRA (CAL FIRE, 2007/2008).

In addition to wildland fires, CAL FIRE's planning efforts involve responding to other types of emergencies, including medical aid, hazardous material spills, swift-water rescues, search and rescue missions, civil disturbances, train wrecks, floods, and earthquakes. Through contracts with local government, CAL FIRE provides emergency services in 36 of California's 58 counties (CAL FIRE, 2012).

# Local

# Kern County General Plan

The project site is located within the boundaries of the General Plan. The policies, goals, and implementation measures in the Kern County General Plan for public services applicable to the 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, 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 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 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 L: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in the County shall not be approved unless adequate fire protection facilities and resources can be provided.

#### **1.10: General Provisions**

#### Goal

Goal 1: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving viable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

#### **1.10.1: Public Services and Facilities**

#### Policies

- Policy 9: New development should pay its pro rata share of the local cost of expansions in services, facilities, and infrastructure that it generates and upon which it is dependent.
- Policy 15: Prior to approval of any discretionary permit, the County shall make the finding, based on information provided by the California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development.
- Policy 16: The developer shall assume full responsibility for costs incurred in service extension or improvements that are required to ensure the project. Cost sharing or other forms of recovery shall be available when the service extensions or improvements have a specific quantifiable regional significance.

#### Chapter 4: Safety Element

#### 4.6: Wildland and Urban Fire

#### Policies

- Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.
- Policy 3: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.
- Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.
- Policy 6: All discretionary projects shall comply with the adopted fire code and the requirements of the fire department.

#### Implementation Measure

Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

### Kern County Fire Department Wildland Fire Management Plan

The KCFD Wildland Fire Management Plan assesses the wildland fire situation throughout the SRA within the County. The Plan includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work within the local fire planning area. The plan systematically assesses the existing levels of wildland protection services and identifies high-risk and high-value areas, which are potential locations for costly and damaging wildfires. The plan also ranks the areas in terms of priority needs and prescribes what can be done to reduce future costs and losses. The KCFD Wildland Fire Management Plan designates a majority of the project site as being located within an Agriculture/Non-Wildland zone (KCFD, 2009). The project site is designated LRA Unzoned by CAL FIRE (CAL FIRE, 2012 and 2007/8).

### 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 multijurisdictional plan includes Kern County, and the incorporated municipalities of Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The plan also covers 53 special districts that include school, recreation and park, water, community service, and other districts. The plan has been formally adopted by each participating entity and is required to be updated a minimum of every five years (KCFD, 2012).

### Kern County Capital Improvement Plan

A proposed countywide Capital Improvement Plan (CIP) was presented to the Kern County Board of Supervisors on October 9, 2007, and adopted in 2008. The CIP represents the best current understanding regarding new public facilities that will be needed to serve projected development in the County through 2030. The scope of services includes parks, libraries, Sheriff's Office (public protection and investigation), fire department, animal control, public health, landfill/transfer facilities, and general government. Roads and sewer costs are not part of the CIP. The adopted CIP includes a summary of proposed service levels for the included facilities and a conceptual list of planned projects upon which the CIP was based. Facility standards for sheriff and fire are 0.39 building square feet per capita and 0.76 building square feet per capita, respectively (MuniFinancial [Muni] 2007). The program includes three phased components:

- Phase One: Develop conceptual CIP for the included facility categories, assessing what additional capacity and conceptual projects are required to provide needed infrastructure for new development through 2030;
- Phase Two: Evaluate existing and potential funding sources, and outline options available as financing mechanisms, including a development fee proposal; and
- Phase Three: Perform a fiscal (operational analysis for use in evaluating the ongoing operating and maintenance impacts of anew development on the County's general fund

The adopted CIP includes a summary of proposed service levels for the included facilities and a conceptual list of panned projects, upon which the CIP was based.

# Kern County Public Facilities Impact Fees

The changing fiscal landscape in California during the past 30 years has steadily undercut the financial capacity of local governments to fund infrastructure. Three dominant trends stand out:

- The passage of a string of tax limitation measures, starting with Proposition 13 in 1978 and continuing through the passage of Proposition 218 in 1996;
- Declining popular support for bond measures to finance infrastructure for the next generation of residents and businesses; and
- Steep reductions in federal and State assistance.

Faced with these trends, the County has adopted a policy of "growth pays its own way" through use of Public Facilities Mitigation Program. The primary policy objective of this program is to ensure that new development pays the capital costs associated with growth. As described above, the County has adopted a CIP that identifies the best current understanding of the public facilities that will be needed to accommodate new development anticipated through 2030. The CIP further identified appropriate existing facility demand standards to be used as a basis for estimating future facility needs and level of service. The basic purpose of the CIP is to identify the facilities and infrastructure needed to serve the population through 2030.

Continued growth in the County, and the impacts resulting from that growth, have increased the demands on countywide public services, making it difficult to implement and fund many of the facilities identified within the CIP while maintaining existing public service demand standards.

The purpose of the Public Facilities Mitigation Program is to identify those impacts on public services and determine the monetary mitigation necessary to provide the facilities associated with that growth. Under

the Public Facilities Mitigation Program, the project could affect: Sheriff Patrol and Investigation Facilities; and Fire facilities.

Fees are required to compensate for impacts to both fire facilities and sheriff patrol and are assigned per 1,000 square feet of industrial development (Willdan, 2009).

# Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2016 California Fire Code and the 2015 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of permit 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 planning 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, 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 5 (Mt. Pinos Communities), which is within an Agriculture/Non-Wildland zone and moderate fire hazard severity zone within the Mt. Pinos Communities fire plan management area (KCFD, 2018).

### Fire Prevention Standard No. 503-507 Solar Panels

The KCFD Fire Prevention Division adopted Standard No. 503-507 Solar Panels (Ground Mounted, Commercial & Residential) on March 27, 2019. The standard is implemented in accordance with the 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 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).

# 4.14.4 Impacts and Mitigation Measures

# Methodology

The methodology used to evaluate fire and law enforcement services impacts includes the following: (1) evaluation of existing fire and law enforcement 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 project, in addition to the existing population and building stock; and (3) determining whether the project's contribution to the future service population would cause fire or law enforcement station(s) to operate beyond service capacity. The determination of the significance of the project on fire protection and emergency medical and law enforcement services considers the level of services required by the project and the ability of KCFD and KCSO to provide this level of service and maintain the regular level of service provided throughout the county, which in turn could require the construction of new or expansion of existing facilities. The methodology for this analysis included a review of published information pertaining to KCFD and KCSO. Using the aforementioned resources and professional judgment, impacts were analyzed according to the CEQA significance criteria described below.

# **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 would have a significant adverse effect on public services:

A project would have a significant impact on public services if it would:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
  - i. Fire Protection
  - ii. Police Protection
  - iii. Schools
  - iv. Parks
  - v. Other Public Facilities

# **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, law enforcement protection and law enforcement services, schools, parks, or other public facilities.

#### Fire Protection

#### Construction

The average and peak number of construction workers to be on site would be approximately 190 and 400, respectively. The presence of construction workers at the project site would be temporary, through the duration of the approximate 12-month construction period. As determined by the County, the project site is not within an area of high or very high fire hazard (CAL FIRE, 2007/2008).

Fire protection requirements are based on the number of residents and workers in the KCFD primary service areas. Service demand is primarily tied to population, not building size, because emergency medical calls typically make up the majority of responses provided by the fire department. As the number of residents and workers increases, so does the number of emergency medical calls. There are no residential uses proposed as a part of the 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 on site would occur during construction of the project. Typically, service demands per employee are less than service demands per resident. Nevertheless, the addition of construction personnel on the project site could result in an increase in demand for fire protection services. While this would be an increase above existing levels, the presence of construction workers on the site would be temporary, as the construction period for the project would last approximately 12 months and would therefore not substantially increase the service demand for fire protection services in Kern County. Project impacts related to fire protection services would be less than significant.

As stated above, the southwest quadrant of the project site is currently subject to a Right of Way easement (license) for the purpose of constructing a fire suppression road. Construction and operation of the project would encroach on the recorded right of way and could potentially cause a significant impact to fire protection services in the project area. Upon consultation with the KCFD, there are no current or future plans to construct a fire suppression road within the project boundary. Mitigation Measure MM 4.9-4 would require the removal or amendment of the right of way easement license to remove the affected portions of the project site form the license prior to construction of the project.

As required by Mitigation Measure MM 4.14-1, the project proponent would prepare and implement a fire safety plan that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code. The plan would be for use during the 12-month construction period, as well as during operations, and would include emergency fire precautions for vehicles and equipment as well as implement fire rules and trainings so temporary employees are equipped to handle fire threats. Implementation of Mitigation Measure MM 4.14-1 would further reduce impacts related to fire protection services. 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 may require one to two employees, but they would not be on site on a permanent basis. Employees would visit the project site intermittently for routine inspection, maintenance, and repair of solar arrays and accessory components at least once a month. The site would be monitored by personnel stationed at the existing PEF approximately 0.5 miles east of the project site. The project would not change existing demand for fire protection services because operation of the project would not result in a substantial increase in employees or population. Therefore, the project would not substantially increase the need for new fire department staff or new facilities and impacts related to fire protection services would be less than significant.

Although unlikely, maintenance activities could introduce fire risks to the project site from maintenance vehicles. However, all maintenance activities would be required to comply with the fire safety plan implemented per Mitigation Measure MM 4.14-1, which would help reduce fire risks on site. In addition, all project facilities would have been designed and constructed in accordance with the 2016 California Fire Code and Kern County Fire Code such that fire hazards are reduced and/or avoided.

The project would also be required to implement Mitigation Measure MM 4.14-2, which would require the project operator to pay Kern County mitigation impact fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation of the project. Implementation of Mitigation Measures MM 4.14-1 and MM 4.14-2, would further reduce any potential operational impacts on fire protection services. Therefore, the project would not result in the need for new or physically altered KCFD facilities and impacts would be less than significant.

#### Law Enforcement 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 Frazier Park substation is located approximately 26.2 miles southwest of the project site and would provide primary law enforcement services to the project site. The nearest CHP office to the project site is the Central Division located at 1033 Lebec Road in the community of Lebec, approximately 22.3 miles southwest of the project site. Similar to fire protection services, the need for sheriff protection services would increase during construction of the project.

The project site is located in a relatively remote location surrounded primarily by vacant agricultural uses with some industrial uses such as the PEF, a gravel quarry, and the Edmonston Pumping Plant. Land uses in the region consist largely of agriculture with a mix of row crops and grazing land 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 I-5 and local roadways during the 12-month construction period. The added traffic associated with workers commuting to the project site, haul routes, deliveries, and other project-related traffic would be temporary and thus would not have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways.

Additionally, chain-link security fencing would be installed around the site perimeter and would separate the east and west halves of the project. The security fence would be approximately 6 feet tall, topped with 1 foot of barbed wire (three strands).

While project construction would increase the number of people on the project site, the increase would be temporary and negligible and, thus, would not substantially increase the service demand for law enforcement protection services in Kern County. Therefore, new or physically altered KCSO or CHP facilities would not be required to accommodate the limited increase in needs from the project during construction and impacts to law enforcement services are less than significant.

#### Operation

Project operation could attract vandals or present other security risks. As described above, the project site is located in a rural area and is thus unlikely to attract attention that would make project facilities susceptible to crime. The chain-link security fencing around the site perimeter and controlled access gates would minimize the need for sheriff surveillance and response during project operation. Therefore, new or physically altered KCSO facilities would not be required to accommodate the project. The additional volume of vehicles associated with workers commuting to the project site during routine maintenance would be minor and is not expected to adversely affect traffic (see Section 4.15, *Transportation*, for more details). Therefore, impacts to the CHP patrol are not anticipated. The project would not result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for law enforcement services. Impacts would be less than significant. In addition, as part of Mitigation Measure MM 4.14-2, the project operator would be required to pay mitigation impact fees to offset potential impacts on sheriff protection services. Thus, implementation of Mitigation Measure MM 4.14-2 would further reduce impacts.

#### Schools/Parks/Other Public Facilities

As stated above, the average and peak number of construction workers to be on site would be approximately 190 and 400, respectively. The presence of construction workers at the project site would be temporary, through the duration of the approximate 12-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. Therefore, the short-term increased employment of construction workers on the project site would not result in a notable increase in the residential population of the area surrounding the project site. Accordingly, there would not be a corresponding demand or use of the local schools, parks, or public facilities. Therefore, project construction workers would not increase demand for local schools, parks, or public facilities such that substantial physical deterioration of such facilities 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 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. 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.

#### Mitigation Measures

Implementation of Mitigation Measure MM 4.9-4 would be required (see Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).

**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 project proponent/operator shall implement the following mitigation steps at the project site:
  - a. For facility operation, the project proponent/operator shall pay for impacts on countywide public protection, sheriff's patrol and investigative services, and fire services at a rate of \$29.59 per 1,000 square feet of panel-covered ground for the

facility operation and related onsite structures for the entire covered area of the project. The total amount shall be divided by 20 and paid on a yearly basis. Any operation that continues past 20 years will pay the same yearly fee. If completed in phases, the annual amount shall be based on the square footage of ground covered by April 30 of each year. The amount shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year for each and every year of operation. Alternatively, the project proponent/operator may choose to pay the total amount, based on 20 years of operation, as a one-time lump sum rather than ongoing annual payments. Copies of payments made shall be submitted to the Kern County Planning and Natural Resources Department.

- b. Written verification of ownership of the project shall be submitted to the Kern County Planning and Natural Resources Department by April 15 of each calendar year. If the project is sold to a city, county, or utility company with assessed taxes that total less than \$1,000 per megawatt per year, then that entity shall pay the taxes plus the amount necessary to equal the equivalent of \$1,000 per megawatt. The amount shall be paid for all years of operation occurring after the date of the transfer. The fee shall be paid to the Kern County Auditor/Controller by April 30 of each calendar year.
- c. The project proponent/operator shall work with the County to determine how the use of sales and use taxes from construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project proponent/operator obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization, using this address for acquisition, purchasing and billing purposes for acquisition, purchasing and billing purposes for acquisition, purchasing and billing purposes associated with the project. As an alternative to the aforementioned process, the project proponent/operator may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid); with the amount of the single payment to be determined via a formula approved by Kern County. The project proponent/operator shall allow the County to use this sales tax information publicly for reporting purposes.
- d. Prior to the issuance of any building permits on the property, the project operator shall submit a letter detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities. The project operator shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.9-4, MM 4.14-1 and MM 4.14-2, impacts would be less than significant.

# **Cumulative Setting, Impacts, and Mitigation Measures**

Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or substantially increase other environmental impacts. Cumulative impacts for a project are considered significant if the incremental effects of the individual projects are considerable when viewed in connection with the effects of past projects and the effects of other projects located in the vicinity of the project site. The cumulative study area is based on the service area for each of the fire and, sheriff, and other governmental offices/facilities serving the project site. As discussed above, fire and sheriff service impacts related to the project would be less than significant with mitigation. Mitigation Measure MM 4.9-4 would require the removal or amendment of the right of way easement license to remove the affected portions of the project site form the license prior to construction of the project. 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 on site. Mitigation Measure MM 4.14-2 requires the project proponent to pay applicable fees and taxes to reduce significant impacts to fire or law enforcement protection services resulting from the project. With payment of the required mitigation fee as assessed by the Kern County Planning and Natural Resources Department, any slight contribution the project would have on the need for additional fire or law enforcement protection services, facilities or personnel required would be appropriately funded. Similar to the project, all other past, present, and reasonably foreseeable future projects located within these fire and sheriff service areas were or would be required to pay this mitigation fee, if deemed appropriate by the Kern County Planning and Natural Resources Department. These projects would also be required to undergo environmental review, in compliance with the requirements of CEQA. Should potential impacts to public services be identified, appropriate mitigation would be prescribed that would reduce impacts to less-than-significant levels.

Therefore, because the project would not create a significant impact on public services, and the other related projects would also be expected to avoid or mitigate impacts on public services, this project would comply with the goals, policies, and implementation measures of the Kern County General Plan and cumulatively significant impacts are anticipated to be less than significant. Therefore, the project's incremental effect is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects. The project would not create a cumulatively considerable impact related to public services with the incorporation of Mitigation Measures MM 4.14-1 and MM 4.14-2 and would have a less-than-significant cumulative impact.

### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.9-4, MM 4.14-1, and MM 4.14-2 would be required (see Section 4.9, *Hazards and Hazardous Materials*, for full mitigation measure text).

# Level of Significance after Mitigation

With the implementation of Mitigation Measures MM 4.9-4, MM 4.14-1, and MM 4.14-2, cumulative impacts would be less than significant.

# 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 *Traffic Study for the Pastoria Solar Project, Kern County, California* (Jacobs, 2020), provided in Appendix M of this EIR.

# 4.15.2 Environmental Setting

The project is located on approximately 650 acres in southcentral Kern County, approximately 25 miles south of the City of Bakersfield. The nearest populated areas to the project site are the unincorporated communities of Grapevine, Wheeler Ridge, Mettler, and Lebec, which are located approximately 3 miles west, 5 miles northwest, 9 miles northwest, and 5 miles southwest of the project site, respectively. The circulation system in the vicinity of the project site is made up of a combination of State and County-jurisdictional facilities. Major components of the system are discussed below and shown in Chapter 3, *Project Description*, Figure 3-1, *Regional Vicinity*, and Figure 3-2, *Project Vicinity*, of this EIR.

# **Regional Setting**

# **Major Highways**

The project site is located near three major highways that would provide access to the general vicinity of the project during the construction and operation phases: Interstate 5 (I-5), State Route (SR) 99, and SR-138.

**I-5** is a major north–south interstate freeway that travels the length of California, connecting the metropolitan regions of Southern and Northern California. In the vicinity of the project site, I-5 is an eightlane freeway with interchanges at Laval Road and Grapevine Road and is the primary regional transportation facility. North of the project site, I-5 travels northwest along the west side of the San Joaquin Valley toward Northern California. South of the project site, I-5 begins climbing into the Tehachapi Mountains toward Tejon Pass and into Southern California. The 6-mile segment of I-5 heading south from the Grapevine Road/I-5 interchange includes a dedicated truck lane in each direction to accommodate heavy vehicles as they navigate the steep grade from Grapevine to Fort Tejon.

**SR-99** is a north–south state highway that begins north of the project site and connects many of the major cities in the San Joaquin Valley. SR-99 begins approximately 3 miles north of the project area at a "Y" junction with I-5, as a six-lane freeway traveling north toward Bakersfield.

**SR-138** is approximately 15 miles south of the plan area. It is an east–west state highway that begins south of Tejon Pass in Los Angeles County. It is a two-lane highway that provides regional access between I-5 and the Antelope Valley cities of Lancaster and Palmdale.

According to the California Department of Transportation (Caltrans) California Scenic Highway Mapping System, there are no Designated State Scenic Highways within Kern County (see Section 4.15.3, *Regulatory Setting*, for more information on the State Scenic Highway Mapping System.

### **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.

### **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 130 provides fixed-route scheduled bus service between Bakersfield and Santa Clarita on I-5, with stops in Grapevine and near Frazier Park. Route 210 provides fixed-route scheduled bus service between I-5 and Frazier Park. No public transit routes pass or stop near the project site.

### Railways

The closest railways, the Arvin Branch and the Sunset Branch, are operated by the Burlington Northern Santa Fe (BNSF) Railroad and are located approximately 17 miles north and 20 miles northwest of the project site, respectively.

# **Airport Facilities**

Airport facilities located within a 20-mile radius of the project site include the following three private airport facilities:

- **Quail Lake Sky Park** is the nearest private airstrip, located approximately 15 miles southeast of the project site. Quail Lake Sky Park has a 3,100-foot asphalt runway, receives no regular scheduled flights, and is not publicly accessible.
- **Paradise Lakes Airport** is a privately owned airport located approximately 16 miles north of the project site in Arvin. Paradise Lakes Airport has a 2,700-foot asphalt runway, receives no regular scheduled flights, and is not publicly accessible.
- **Creekside Airport** is a privately owned airport located approximately 16 miles north of the project site in Arvin (adjacent to the Paradise Lakes Airport). Creekside Airport has a 2,000-foot asphalt/turf runway, receives no regular scheduled flights, and is not publicly accessible.
- **Conover Air Lodge Airport** is a privately owned airport located approximately 17 miles southwest of the project site. Conover Air Lodge Airport has a 3,000-foot dirt runway, receives no regular scheduled flights, and is not publicly accessible.

# **Local Setting**

### Site Access

Local roadway access is provided directly to the site from Edmonston Pumping Plant Road, a private road (with connections to unnamed agricultural roads), which runs east–west to connect to I-5 at Grapevine Road. Development of the Grapevine Specific and Community Plan (2019), as discussed below in Cumulative Setting, Impacts, and Mitigation Measures, would include improvements to an existing private agricultural haul road bisecting the project site. The private agricultural haul road runs north–south and connects Edmonston Pumping Plant Road to Laval Road. Improvements would include road pavement. The timing of construction on the agricultural haul road is unknown but is expected to proceed as development of the Grapevine Specific and Community Plan necessitates; it is anticipated that this would occur after construction, but during operation, of the proposed project.

# Traffic Analysis

Considering the access route described above, this traffic impact analysis evaluates the following five roadway segments in the vicinity of the project site, where project traffic would contribute turning vehicles:

- 1. I-5 north of the Grapevine Interchange
- 2. I-5 south of the Grapevine Interchange
- 3. Grapevine Road East
- 4. Grapevine Road West
- 5. Grapevine Road

The environmental setting characteristics relating to transportation for the construction, operation, and decommissioning of the gen-tie and SCE Pastoria Substation infrastructure are substantially similar to the project site.

Existing average daily traffic volumes (ADTs) for I-5 were assembled from the latest available data from Caltrans. Daily traffic volumes on the three study segments of Grapevine Road were assembled from the latest available data from the Kern Council of Governments (Kern COG). As shown in **Table 4.15-1**, *Existing Conditions Roadway Segment Level of Service*, the roadway segments serving the project area currently operate at level-of-service (LOS) B or LOS C during the analyzed time periods based on the capacity of similar roadway classifications (Florida Department of Transportation [FDOT], 2012). The 2012 FDOT Quality/Level of Service Handbook indicates that a typical eight-lane rural freeway like I-5 would operate at LOS C with ADTs of up to 85,400 vehicles; for two-lane rural undeveloped highways, which would have similar operating characteristics as the three study roadway segments on Grapevine Road, LOS B conditions would occur with ADTs of up to 4,700 vehicles.

LOS is commonly used as a qualitative description of intersection operations. LOS is based on the capacity of the intersection, the signal timing, and the volume of traffic (turning movements). For Kern County, LOS B indicates "Stable operation: an occasional approach phase is fully used. Many drivers begin to feel somewhat restricted within platoons of vehicles. Minimal delays." LOS C indicates: "Stable operation: major approach phase may become fully used and most drivers feel somewhat restricted. Acceptable delays." Refer to the 2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) (Kern COG, 2018).

Study Roadway Segment	Average Daily Traffic Volume	Level of Service
I-5, north of Grapevine Interchange	41,500	С
I-5, south of Grapevine Interchange	41,500	С
Grapevine Road East	2,010	В
Grapevine Road West	2,251	В
Grapevine Road	6,628	В
SOURCE: Jacobs, 2020		

 TABLE 4.15-1: EXISTING CONDITIONS ROADWAY SEGMENT LEVEL OF SERVICE

# 4.15.3 Regulatory Setting

# Federal

# Federal Aviation Administration (FAA)

The FAA regulates aviation at regional, public, and private airports. The FAA regulates objects affecting navigable airspace. According to 49 Code of Federal Regulations Part 77.9, any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA of:

- Any construction or alteration exceeding 200 feet above ground level;
- Any construction or alteration:
  - Within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway where the longest airport runway exceeds 3,200 feet in actual length;
  - Within 10,000 feet of a public use or military airport which exceeds a 50:1 surface from any point on the runway where the longest airport runway is less than 3,200 feet in actual length; and
  - Within 5,000 feet of a public use heliport which exceeds a 25:1 surface;
- Any highway, railroad, or other traverse way whose prescribed adjusted height would exceed the above standards;
- When requested by the FAA; and
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

Failure to comply with the provisions of Federal Aviation Regulation Part 77 is subject to civil penalty under Section 902 of the Federal Aviation Act of 1958, as amended, and pursuant to 49 United States Code Section 46301(a).
### State

### **California Department of Transportation**

The California Department of Transportation (Caltrans) has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. The Central Valley and western portions of Kern County (i.e., including the project site and surrounding area) are under the jurisdiction of Caltrans District 6. The Caltrans regulations below apply to potential transportation and traffic impacts of the project:

- California Vehicle Code (CVC), Division 15, Chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.
- California Street and Highway Code, Sections 660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of State and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.
- **Project Development Procedures Manual, Chapter 27.** Access Control Modification. Requires Caltrans approval of proposed connections to a public road through submittal of a proposal to Caltrans (Caltrans, 2016).

### Local

### Kern County General Plan

The policies, goals, and implementation measures in the Kern County General Plan Circulation Element for transportation that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and are not specific to development such as the project. Therefore, they are not listed below, but all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference. The design LOS for Kern County is LOS C. The minimum LOS for conformance with the Kern County General Plan is LOS D.

#### **Circulation Element**

#### 2.1: Introduction

#### Goals

- Goal 4: Kern County will plan for a reduction of environmental effects without accepting a lower quality of life in the process.
- Goal 5: Maintain a minimum [level of service] LOS D for all roads throughout the County.

#### 2.3.3: Highway Plan

#### Goal

Goal 5: Maintain a minimum LOS D.

#### Policies

- Policy 1: Development of roads within the County shall be in accordance with the Circulation Diagram Map. The charted roads are usually on section and midsection lines. This is because the road centerline can be determined by an existing survey.
- Policy 2: This plan requires, as a minimum, construction of local road widths in areas where the traffic model estimates little growth through and beyond 2010. Where the Kern County Planning and Natural Resources Department's growth estimates indicate more than a local road is required, expanded facilities shall be provided. The timing and scope of required facilities should be set up and implemented through the Kern County Land Division Ordinance. However, the County shall routinely protect all surveyed section lines in the Valley and Desert regions for arterial right-of-way. The County shall routinely protect all midsection lines for collector highways in the same regions. The only possible exceptions shall be where the County adopts special studies and where Map Code 4.1 (Accepted County Plan) areas occur. In the Mountain Region where terrain does not allow construction on surveyed section and midsection lines, right-of-way width shall be the size shown on the diagram map. No surveyed section and midsection "grid" will comprehensively apply to the Mountain Region.
- Policy 3: This plan's road-width standards are listed below. These standards do not include state highway widths that would require additional right-of-way for rail transit, bike lanes, and other modes of transportation. Kern County shall consider these modifications on a case-by-case basis.
  - Expressway [Four Travel Lanes] Minimum 110-foot right-of-way;
  - Arterial [Major Highway] Minimum 110-foot right-of-way;
  - Collector [Secondary Highway] Minimum 90-foot right-of-way;
  - Commercial-Industrial Street Minimum 60-foot right-of-way; and
  - Local Street [Select Local Road] Minimum 60-foot right-of-way.

#### Implementation Measure

Measure A: The Planning Department shall carry out the road network policies by using the Kern County Land Division Ordinance and Zoning Ordinance, which implements the Kern County Development Standards that includes road standards related to urban and rural planning requirements. These ordinances also regulate access points. The Planning Department can help developers and property owners in identifying where planned circulation is to occur.

#### 2.3.4: Future Growth

#### Goal

Goal 1: To provide ample flexibility in this plan to allow for growth beyond the 20-year planning horizon.

#### Policies

- Policy 2: The County should monitor development applications as they relate to traffic estimates developed for this plan. Mitigation is required if development causes affected roadways to fall below LOS D. Utilization of the 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.

#### 2.3.10: 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.

### Kern Council of Governments Congestion Management Program

All urbanized areas with a population larger than 200,000 residents are required to have a Congestion Management System, program, or process. The Kern COG refers to its congestion management activities as the CMP. 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 LOS performance standards and air quality improvement. The program attempts to link land use, air quality, transportation, and 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 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 2018 RTP/SCS. 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 establishes procedures and criteria to assist Kern County and affected incorporated cities in addressing compatibility issues between airports and surrounding land uses. Quail Lake Sky Park is located approximately 15 miles southeast of the project site. Paradise Lakes Airport and Creekside Airport are located approximately 16 miles north of the project site. Conover Air Lodge Airport is located approximately 17 miles southwest of the project site. The project site is not located within a designated Airport Land Use Compatibility zone.

# 4.15.4 Impacts and Mitigation Measures

# Methodology

The project's potential impacts to transportation have been evaluated using the Traffic Study (Jacobs, 2020) attached as Appendix M of this EIR and a variety of published resources. This traffic impacts analysis is a planning-level LOS analysis for daily/peak hour traffic on the nearest major roadways that will be used to access the project site: I-5 and the Grapevine interchange, and intersections around the interchange including Grapevine Road with Edmonston Pumping Plant Road. The impact assessment is based on estimated traffic volumes associated with construction activities (workers and trucks/deliveries) and operations activities. Impact significance has been determined based on LOS guidelines from the Kern County General Plan (maintain LOS D or better) and other agencies, in conjunction with the 2019 *CEQA Guidelines* Appendix G: CEQA Checklist. Other impact assessments include qualitative assessments based on available information.

### Trip Generation, Distribution, and Assignment

Traffic accessing the project site is anticipated to come mainly from surrounding population centers such as Bakersfield and Arvin from the north, and Frasier Park and Santa Clarita to the South. Traffic from the Bakersfield and Arvin to the north is anticipated to access the project site via SR-99 and I-5. Traffic coming from the south is anticipated to access the project site via I-5.

#### Construction

During the peak of construction activity, it is anticipated that a maximum of 400 workers will be on site daily. Up to 16 percent of construction workers may carpool to the site (64 workers at the maximum workforce of 400), which would result in an adjusted 336 maximum number of passenger vehicles during construction. Consistent with similar traffic studies in the area, heavy truck volumes were converted to passenger-car-equivalent (PCE) volumes using a factor of 2.2 trips per day to account for the effective reduction in free-flow speed (mean traffic speed under low-flow conditions) caused by the presence of heavy vehicles in the traffic flow. Heavy truck trips were estimated to be up to 10 per day based on assumptions regarding daily deliveries of materials, equipment, and water anticipated for construction. It was assumed that the trucks would enter the facility throughout the day, and therefore only a portion of the truck trips would occur during the peak AM and PM hours.

In total, the project would generate an estimated maximum of 345 morning peak hour trips (336 daily construction worker trips and nine truck trips) and 345 afternoon peak hour trips (336 daily construction worker trips and nine truck trips) in PCEs. Trip generation estimates for construction traffic are presented in **Table 4.15-2**, *Project Trip Generation – Construction*.

TABLE 4.13-2. TROJECT TRI GENERATION – CONSTRUCTION						
			AM Peak Hour Trips		PM Peak Hour Trips	
Traffic Type	Variable	ADT	Inbound	Outbound	Inbound	Outbound
Personnel	400	672	336	0	0	336
Heavy Trucks	10	44	9	0	0	9
Total Trips		716	345	0	0	345
SOURCE: Jacobs, 2020; ESA, 2020.						

 TABLE 4.15-2:
 PROJECT TRIP GENERATION – CONSTRUCTION

#### Operation

During operation of the project, one to two employees would be on-site intermittently every month, resulting in fewer than four vehicle trips per week, to perform maintenance duties including periodic inspection, maintenance and repair of the solar arrays. This would result in an estimated 20 trips to the site per month or up to one to two vehicle trips per day.

### **Trip Distribution/Assignment**

All project trips must enter/exit through Edmonston Pumping Plant Road before being distributed to either Grapevine Road East or West, and onto I-5. Based on traffic volume data from Kern COG, the 345 maximum construction trips from the project site would be distributed nearly equally between Grapevine

Road East and Grapevine West. It is estimated that 162 trips (47 percent of project trips) would be distributed onto Grapevine Road East and an estimated 183 trips (53 percent of project trips) would be distributed onto Grapevine Road West on a daily basis.

Based on Caltrans traffic volume data for the Grapevine interchange on- and off-ramps, it was assumed that 59 percent of traffic from Grapevine Road East would continue onto northbound I-5, and 38 percent of traffic from Grapevine Road West would continue onto southbound I-5. Therefore, it is estimated that construction of the project would generate 96 trips on northbound I-5 (59 percent of trips from Grapevine Road East) and 35 trips on southbound I-5 (38 percent of trips from Grapevine Road West) on a daily basis.

### 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 traffic.

A project could have a significant adverse effect on transportation if it would:

- a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows:
  - 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(b);
- c. Substantially increases hazards due to a geometric design feature (such as sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- d. Result in inadequate emergency access.

### **Project Impacts**

Impact 4.15-1: The project would conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, as follows: Kern County General Plan LOS "D."

#### Construction

LOS is commonly used as a qualitative description of intersection operations. LOS is based on the capacity of the intersection, the signal timing, and the volume of traffic (turning movements). The County and Caltrans use the Highway Capacity Manual (HCM) intersection analysis methodology to analyze the operation of signalized and unsignalized study intersections.

The HCM analysis methodology describes the operation of a roadway segment or intersection using a range from LOS A (free flow conditions) to LOS F (severely congested conditions). The Caltrans target for peak hour operations is LOS C or better. The target LOS for Kern County, as established by the Kern County General Plan Circulation Plan is LOS D or better. LOS E has been established as the minimum system-wide LOS traffic standard in the Kern COG Congestion Management Plan.

The existing (baseline without project) and project construction scenarios are based on an anticipated opento-traffic date of 2020. LOS was analyzed for both the existing and project construction scenarios. Standard LOS assumptions for rural freeways and undeveloped highways were used to determine existing LOS. As shown in **Table 4.15-3**, *Existing and Project Construction Level of Service*, local traffic would not change from the existing LOS B or C operations with the addition of project-generated construction traffic based on the capacity of similar roadway classifications (FDOT, 2012). As such, project construction would have a less-than-significant impact on area roadways and intersections.

Study Roadway Segment	Existing Daily Traffic Volume	Existing Level of Service	Project Trips	Project Daily Traffic Volume	Project Level of Service
I-5, north of Grapevine Interchange	41,500	С	96	41,596	С
I-5, south of Grapevine Interchange	41,500	С	35	41,535	С
Grapevine Road East	2,010	В	162	2,172	В
Grapevine Road West	2,251	В	183	2,434	В
Grapevine Road	6,628	В		6,628	В
SOURCE: Jacobs, 2020					

#### TABLE 4.15-3: EXISTING AND PROJECT CONSTRUCTION LEVEL OF SERVICE

#### **Operation and Maintenance**

As stated previously, operation and maintenance of the project would generate fewer than four vehicle trips per week. This would result in an estimated 20 vehicle trips to the site per month or up to one to two vehicle trips per day. The addition of such a small number of vehicles to the roadway network would not have a discernable effect on roadway operations or levels of service. As such, project operation would have a less-than-significant impact on area roadways and intersections.

#### Decommissioning

Decommissioning impacts would be relatively similar to those identified for construction of the project and would be short-term and temporary. Thus, decommissioning of the project would result in a less-than-significant impact with respect to LOS for roadways.

#### Transit, Bicycle, and Pedestrian Facilities

There are no dedicated pedestrian or bicycle facilities in the immediate vicinity of the project site or along the surrounding roadways. Due to the rural nature of the project area, bicycle traffic is limited. The project is not located along an existing bus route and few bus stops exist on the roadways likely to be used during construction and operation. The project would not house residents or employees and, therefore, would not have characteristics that could influence alternative means of transportation. Therefore, impacts would be less than significant.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

# Impact 4.15-2: The project would conflict or be inconsistent with CEQA Guidelines Section 15064.3(b).

The new *CEQA Guidelines* Section 15064.3(b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the *CEQA Guidelines* criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas and shifts the focus from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. Vehicle miles traveled, or VMT, is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

The newly adopted guidance provides that a lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide. Kern County is currently engaged in this process and have not yet formally adopted its updated transportation significance thresholds or its updated transportation impact analysis procedures. Since the regulations of SB 743 have not been finalized or adopted by the County, automobile delay remains the measure used to determine the significance of a traffic impact. Therefore, impacts related to *CEQA Guidelines* Section 15064.3(b) would be less than significant.

#### **Mitigation Measures**

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

# Impact 4.15-3: The project would substantially increase hazards due to a geometric design feature (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. The need for and number of escorts, California Highway Patrol escorts, as well as the timing of transport, would be at the discretion of Caltrans and Kern County, and would be detailed in respective oversize load permits. Thus, potential impacts would be reduced to a less-than-significant level.

While impacts would be less than significant, Mitigation Measure MM 4.15-1 would require that all oversize vehicles used on public roadways during construction obtain required permits and obtain approval of a Construction Traffic Control Plan, as well as identify anticipated construction delivery times and

vehicle travel routes in advance to minimize construction traffic during AM and PM peak hours. 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

- **MM 4.15-1:** Prior to the issuance of construction or building permits, the project proponent/operator shall:
  - a. Prepare and submit a Construction Traffic Control Plan to Kern County Public Works Department – Development Review and the California Department of Transportation offices for District 6, 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 address, at a minimum, the following issues:
    - i. Timing of deliveries of heavy equipment and building materials;
    - ii. Directing construction traffic with a flag person;
    - iii. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;
    - iv. Ensuring access for emergency vehicles to the project sites;
    - v. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;
    - vi. Maintaining access to adjacent property; and,
    - vii. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hours.
  - 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 the California Department of Transportation.
  - 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 county and non-county maintained roads that demonstrably 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 project responsibility for the damage and the extent of remediation required, if any.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.15-1, impacts would be less than significant.

#### Impact 4.15-4: The project would result in inadequate emergency access.

The project site is located in a rural area with the primary access roads (Grapevine Road, Edmonston Pumping Plant Road) 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 project would not physically interfere with emergency vehicle access or personnel evacuation from the site.

As described above, increased project-related traffic would not cause a significant increase in congestion and/or significantly worsen the existing operating conditions on area roads; therefore, project-related traffic would not affect emergency access to the project site or any other surrounding location. The project would not require closures of public roads, which could inhibit access by emergency vehicles. For these reasons construction and operation would have a less-than-significant impact on emergency access.

While impacts would be less than significant, Mitigation Measure MM 4.15-1 would provide further assurances for emergency access. Mitigation Measure MM 4.15-1 requires the preparation of a Construction Traffic Control Plan that considers access for emergency vehicles to the project site. During project operation, Mitigation Measure MM 4.15-1 requires the project operator obtain Kern County approval of all proposed access road designs prior to construction, further ensuring onsite emergency access is adequate.

#### Mitigation Measures

Implementation of Mitigation Measure MM 4.15-1 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.15-1, impacts would be less than significant.

### **Cumulative Setting, Impacts, and Mitigation Measures**

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. Kern County provided a list of cumulative (past, present, and reasonably foreseeable future) projects within 6 miles of the project site. Most of the projects are small, and many involving installation of cellphone towers, equipment or building remolding that would not factor greatly as part of the cumulative impact analysis for this project. The following two cumulative projects were considered relevant in terms of traffic impacts analysis:

### **Griffith Quarry Expansion**

The Griffith Quarry Expansion Project is located approximately 0.5 miles east of the project site. The expansion was permitted and implemented in 2011 and traffic associated with this project is therefore included in the baseline condition for the analysis of traffic impacts associated with the project. However, decommissioning of the quarry is planned to take place in 2033. The project would be constructed prior to 2033 and would not contribute construction traffic volumes to the project or project site beyond those already existing. Operations traffic associated with the project are very small and would not contribute to a cumulatively considerable impact. Currently, large trucks haul gravel and other building products from the Griffith Quarry along Edmonston Pumping Plant Road to I-5 and beyond.

### Grapevine Specific & Community Plan (2019)

The Grapevine Specific & Community Plan (2019) is an approved new mixed-use development of up to 12,000 residential units and 5,100,000 square feet of commercial uses, the closest portion of which is located approximately 0.85 miles south of the project site. The Grapevine Specific & Community Plan encompasses approximately 8,010 acres of the 15,640-acre Grapevine planning area. The Grapevine Specific & Community Plan (2019) was approved by the Kern County Board of Supervisors in 2019, and construction is anticipated to begin within five years of approval. Full buildout of the Grapevine Specific and Community Plan is expected to occur over 19 years.

During construction, cumulative construction impacts exists where there are multiple projects proposed in an area that have overlapping construction schedules that could affect similar resources. However, as discussed above, local traffic would not change from the existing LOS B or C operations with the addition of project-generated construction traffic based on the capacity of similar roadway classifications. However, as it relates to impacts regarding increased hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), the project would implement Mitigation Measure MM 4.15-1, which would require implementation of a Construction Traffic Control Plan. The Grapevine Specific & Community Plan would implement similar mitigation that would further reduce impacts related to hazardous design. Therefore, with implementation of this mitigation, cumulative construction impacts would be less than significant.

The Grapevine Specific & Community Plan would improve an existing north–south farm access road through the center of the project site that would connect the east–west Laval Road (north of the project site) to Edmonston Pumping Plant Road south of the project site. This roadway would re-route truck access to and from the Griffith Quarry, the Edmonston Pumping Plant, and the existing Pastoria Energy Center (located directly east of the project site) from Edmonston Pumping Plant Road (which will be within the Grapevine Specific & Community Plan residential area). With the buildout of the Grapevine Specific & Community Plan residential area) the project site) to the newly improved road

through the project site, to Edmonston Pumping Plant Road, instead of using the Grapevine Road/I-5 interchange. The Grapevine Specific & Community Plan would generate additional traffic on Edmonston Pumping Plant Road from new residential, commercial, and industrial uses but would also re-route almost all of the current traffic on Edmonston Pumping Plant Road to Laval Road and the I-5 interconnection at Wheeler Ridge. For this reason, existing traffic and project traffic would not combine with Grapevine Specific & Community Plan traffic in a cumulatively significant way along Edmonston Pumping Plant Road and the Grapevine Interchange. Therefore, cumulative operational impacts would be less than significant.

### **Mitigation Measures**

Implementation of Mitigation Measure MM 4.15-1 would be required.

### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.15-1, cumulative construction impacts would be less than significant. Cumulative operational impacts would be less than significant.

# 4.16.1 Introduction

This section of the EIR provides an assessment of potential impacts related to tribal cultural resources that could result from implementation of the project. The analysis in this section is based on the results of the *Cultural Resources Inventory of the Pastoria Solar Project* (Jacobs Engineering Group, 2019), provided in Appendix E of this EIR, and results of the Native American consultation conducted by the County for purposes of compliance with California Environmental Quality Act (CEQA) requirements prompted by Assembly Bill 52 (AB 52).

# 4.16.2 Environmental Setting

Refer to Section 4.5, *Cultural Resources*, of this EIR for further discussion of the tribal cultural resources environmental setting.

# **Existing Tribal Cultural Resources**

### Native American Correspondence and AB 52 Consultation

A Sacred Lands File (SLF) search was requested from the California Native American Heritage Commission (NAHC) for the proposed project on June 5, 2019. The NAHC responded via a letter dated June 11, 2019, stating that no Native American cultural resources are known to be located in the project site. The SLF request and response from the NAHC are included as an appendix in the cultural resources study prepared for the proposed project (Jacobs Engineering Group, 2019), included as Appendix E of this EIR.

On March 13, 2019, the County sent consultation notification letters via certified mail to Native American groups on the County's Master List pursuant to the requirements of AB 52 pertaining to government-to-government consultation. **Table 4.16-1**, *Summary of AB 52 Consultation Efforts*, summarizes the County's consultation efforts. To date, the County has received two responses, one from San Manuel Band of Mission Indians (San Manuel) and one from Twentynine Palms Band of Mission Indians (Twentynine Palms). In an email dated March 19, 2019, Ms. Mary Vizcaino, Senior Administrative Assistant for San Manuel, stated that the project is not located within San Manuel's ancestral territory and that San Manuel would not request government-to-government consultation. In a letter dated March 18, 2019, Mr. Anthony Madrigal Jr., Tribal Historic Preservation Officer for Twentynine Palms, stated the Twentynine Palms is not aware of any cultural resources within the project site, and defers to tribal groups in closer proximity to the project.

Individual Contacted	Tribe/Organization	Date Letter Mailed	Response Received
Michael Mirelez, Cultural Resources Coordinator	Torres Martinez Desert Cahuilla Indians	3/13/2019	No response
Jessica Mauck, Cultural Resources Analyst	San Manuel Band of Mission Indians	3/13/2019	San Manuel responded in an email dated March 19, 2019, stating the project is not located within San Manuel's ancestral territory and San Manuel will not request consultation
Collin Rambo, Cultural Resource Management Technician	Tejon Indian Tribe	3/13/2019	No response
Anthony Madrigal Jr., Tribal Grants Administrator	Twentynine Palms Band of Mission Indians	3/13/2019	In a letter dated March 18, 2019, Twentynine Palms stated they are not aware of any cultural resources within the project site, and defer to tribal groups in closer proximity to the project.

#### TABLE 4.16-1: Summary of AB 52 Consultation Efforts

### **Nearby Historical Places**

Two previously recorded cultural resources are within the project vicinity. The Sebastian Indian Reservation (P-15-007674/CHL 133), which was designated in 1934 as a California Historical Landmark (CHL) and due to the age of the listing, never included a geographical boundary but is located generally south of the project site at the base of the Tehachapi foothills, and Big Creek East & West Transmission Line (P-15-019115), which is a contributor to the Big Creek Hydroelectric System Historic District, listed on the National Register of Historic Places in 2016 and is described in more detail in Section 4.5, *Cultural Resources*, of this EIR which the gen-tie component of the project crosses under. Because the Sebastian Indian Reservation Landmark is unbounded, the remaining extant contributing sites for the reservation have been researched and nominated for the National Register of Historic Places as the Sebastian Indian Reserve Discontiguous Archeological District (Sebastian Reserve District). The Sebastian Indian Reservation Landmark and Sebastian Reserve District are referenced together.

In 2013, Tejon Ranch sponsored a project to identify and map the existing remnants of the Sebastian Indian Reservation and to nominate all contributing sites to the NRHP as a historic district, to ensure its preservation. In 2014, the Sebastian Reserve District was nominated for listing in the National Register, and the State Historic Resources Commission approved the nomination by consent calendar on November 7, 2014. This approval means that the district is listed on the CRHR and found to be eligible for listing on the NRHP. Final approval by the Keeper of the NRHP will officially add the district to the National Register.

The district consists of five primary Native American villages occupied during the district's period of significance (1850–1875), including the first reserve headquarters, and remnants of the second headquarters. The archeological sites comprising the district landscape, and the features and artifacts within them, accordingly, represent the only physical remnants of the original reservation. As such, the district would qualify as a Tribal Cultural Resource.

# 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 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.

### Assembly Bill 52 and Related Public Resources Code Sections

AB 52 was approved by California State Governor Edmund Gerald "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 *CEQA Guidelines* Appendix G, 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. 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 *CEQA Guidelines* Appendix G, 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:

- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
  - a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or
  - b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

### **Project Impacts**

Impact 4.16-1a: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).

The SLF search conducted by the NAHC did not indicate the presence of tribal cultural resources within or immediately adjacent to the project site. Furthermore, the County's government-to-government consultation efforts with interested Native American groups conducted pursuant to AB 52 did not result in the identification of tribal cultural resources within the project site.

A portion of the Sebastian Indian Reservation California Historic Landmark (P-15-007674/CHL 133), described above, is located approximately 1 mile south of the project site. Based on the proximity of the project site to the CHL133 and a lack of identified cultural resources within the project study area, the potential of the project to cause a substantial adverse change in the significance of a tribal cultural resources as defined in PRC Section 21074 is low. In the event that buried significant tribal cultural resources are encountered during project construction, significant impacts could occur. Implementation of Mitigation Measures MM 4.5-1, MM 4.5-2, MM 4.5-3, and MM 4.5-4, included in Section 4.5, *Cultural Resources*, of this EIR, would reduce the potential for impacts to tribal cultural resources to a less than significant level.

#### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required (see Section 4.5, *Cultural Resources*, for full mitigation measure text).

#### Level of Significance

With implementation Mitigation Measures MM 4.5-1 through MM 4.5-4 impacts would be less than significant.

Impact 4.16-1b: The project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

As noted above, no tribal cultural resources were identified through the SLF search conducted by the NAHC, nor as part of the County's government-to-government notification and consultation efforts with interested Native American groups conducted pursuant to AB 52. Given that no tribal cultural resources have been identified within or immediately adjacent to the project site, the project would not cause a substantial adverse change in the significance of a tribal cultural resource. Impacts would be less than

significant. Implementation of Mitigation Measure MM 4.5-1, MM 4.5-2, MM 4.5-3, and MM 4.5-4, included in Section 4.5, *Cultural Resources*, of this EIR, would further reduce potential impacts to tribal cultural resources.

#### Mitigation Measures

Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required (see Section 4.5, *Cultural Resources*, for full mitigation measure text).

#### Level of Significance

With implementation Mitigation Measures MM 4.5-1 through MM 4.5-4 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 Southern San Joaquin Valley. This geographic scope of analysis is appropriate because the resources within this area are expected to be similar to those that may occur within 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 be cumulatively considerable and affect tribal cultural resources.

Multiple projects, including mining, telecommunication infrastructure, and commercial development, are proposed throughout the Southern San Joaquin Valley. Cumulative impacts to tribal cultural resources in the Southern San Joaquin Valley could occur if other related projects, in conjunction with the proposed project, had or would have impacts on cultural resources that, when considered together, would be significant.

Potential impacts of the project to tribal cultural resources, in combination with other projects in the area, could contribute to a cumulatively significant impact due to the overall loss of resources unique to the region. However, as discussed above, no tribal cultural resources have been identified in the project site and the project would not have a significant impact on tribal cultural resources. Therefore, the project's incremental effect is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects; thus, the project would not have a cumulatively considerable contribution to impacts to tribal cultural resources.

### **Mitigation Measures**

Implementation of Mitigation Measures MM 4.5-1 through MM 4.5-4 would be required.

### Level of Significance

With implementation Mitigation Measures MM 4.5-1 through MM 4.5-4 cumulative impacts would be less than significant.

This page intentionally left blank

# 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 control, wastewater, and solid waste disposal, electricity, natural gas, and telecommunications). This section describes existing infrastructure and levels of service and evaluates whether any improvements would be necessary to accommodate the project. Information in this section is based primarily on the *Pastoria Solar Project Preliminary Floodplain Study and Scour Analysis* (Kasraie, 2019) and *Water Supply Assessment* (Jacobs, 2019) provided in Appendix K and Appendix N of this EIR, respectively.

# 4.17.2 Environmental Setting

# Water Supply

There are typically three sources of supply water: (1) natural sources; (2) manmade sources; and (3) reclamation. Natural sources include rivers, lakes, streams, and groundwater stored in aquifers. Manmade sources include runoff water that is treated and stored in reservoirs and other catchment structures. Reclaimed water is wastewater that has been conveyed to a treatment plant and then treated to a sufficient degree that it may again be used for certain uses (such as irrigation). However, reclaimed water is not potable (drinkable) and must be conveyed in a separate system in order to ensure that there is no possibility of direct human consumption.

The project site is located in the south central portion of the San Joaquin Valley of Kern County within the boundaries of the Tejon-Castac Water District (TCWD) which is under a long-term contract with the regional wholesale agency, Kern County Water Agency (KCWA), for use of State Water Project (SWP) water. KCWA has a long-term contract with the California Department of Water Resources (DWR) to receive up to 982,730 acre-feet per year (afy). TCWD receives its water from KCWA, which can also receive non-SWP water deliveries to meet its demands. There are existing water distribution lines that border the project site that include four turnouts for water delivery. Water within the pipelines is supplied by the SWP. The project proponent has entered into an agreement with TCWD to use up to 2 afy from these four turnouts.

The project site is currently undeveloped open space that has been historically used for grazing operations and there are no existing water demands onsite.

### 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

project site is located within the White Wolf Subbasin of the San Joaquin Valley Groundwater Basin. San Joaquin Valley – White Wolf is currently designated as a medium priority basin under SGMA. Thus, the water districts in the area, Arvin-Edison Water Storage District, Tejon-Castac Water District, and Wheeler Ridge Maricopa Water Storage District formed the White Wolf Subbasin Groundwater Sustainability Agency, are required to comply with SGMA.

### Wastewater

The Kern Sanitation Authority (KSA) provides maintenance and wastewater service for Kern County. As the project site is currently undeveloped, there are no known septic systems within the project site boundary.

# **Stormwater Drainage**

As stated previously, the project site is not and has never been developed beyond agricultural use for row crops and grazing, with the exception of dirt roads. Therefore, all stormwater drainage onsite follows natural drainage patterns on the land surface. On the project site and in the surrounding area, ephemeral drainages convey stormwater from the Tehachapi Mountain foothill areas towards the north. There is an existing irrigation/drainage channel that runs in an east-west direction along the southern boundary of the site that conveys smaller storm events towards Pastoria Creek, east of the site, thereby circumventing the project site. During higher rainfall events that produce overland flow in the area, runoff concentrates in the defined channels of the Tehachapi Mountains or as overland sheetflow.

Stormwater drainages within the project site are limited to poorly defined/shallow swales and discontinuous ephemeral channels that are not established enough to register in topographic surveys. This suggests a natural tendency for surface runoff events to be both brief and infrequent, with rapid infiltration into the sandy substrate, and/or shallow ponding in low-lying areas quickly followed by high evaporation.

# 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. Although no solid waste is currently generated at the project site, the closest operational

landfill to the project site is the Bakersfield Metropolitan Landfill, located approximately 26 miles to the north of the project site; however, the Lebec Transfer Station is located approximately 9 miles south of the site. The Bakersfield Metropolitan Landfill is a Class III solid waste facility that accepts wastes from construction and demolition, industrial and mixed municipal sources (California Department of Resources Recycling and Recovery [CalRecycle], 2019a). The Lebec Transfer Station is a medium volume transfer and processing facility that accepts mixed municipal waste (CalRecycle, 2019b). The other nearby landfill is the Tehachapi Sanitary Landfill, is a Class III Landfill (CalRecycle, 2019c) which is located approximately 32 miles east of the project site; however, it is anticipated to cease operation by June 2020. The Taft Recycling & Sanitary Landfill is located approximately 37 miles northwest of the site. The location of the landfills expected to serve the project, their capacity, and their anticipated closure dates are presented in **Table 4.17-1**, *Summary of Kern County Public Works Landfills*.

Landfill	Maximum Permitted Capacity	Remaining Capacity (cubic yards)	Maximum Permitted Throughput (tons/day)	Anticipated Year of Closure
Bakersfield Metropolitan (Bena) SLF 2951 Neumarkel Road, Caliente	53,000,000	32,808,260	4,500	2046
Lebec Transfer Station 300 Landfill Road, Lebec	n/a	n/a	99	n/a
Taft Recycling and Sanitary Landfill 13351 Elk Hills Road, Taft	11,000,000	7,380,708	800	2076
SOURCE: CalRecycle, 2019e				

### **Electricity, Natural Gas, and Telecommunications**

No electricity, natural gas, nor telecommunications facilities are currently located on the project site, other than a third-party microwave repeater in the northeastern corner of the site. Southern California Gas (SoCalGas) is the natural gas provider in this area of Kern County. No natural gas pipelines are located within the project site. Retail electric service in Kern County is split between Pacific Gas and Electric (PG&E) and Southern California Edison (SCE). PG&E's retail service is concentrated in western Kern County while SCE serves the east County area. Refer to the interactive map of PG&E's retail electric service territory (PG&E, 2020) and SCE's retail electric service territory (SCE, 2020). The project is located in PG&E's retail electric service territory. Accordingly, electric power for construction and station power for operations would be brought to the site through a new PG&E service connection.

# 4.17.3 Regulatory Setting

# Federal

There are no applicable federal regulations for this issue area.

### State

### **California Energy Commission**

The California Energy Commission (CEC) is the state's primary energy policy and planning agency. Created in 1974, the CEC has five major responsibilities: forecasting future energy needs and keeping historical energy data, licensing thermal power plants 50 megawatts (MW) or larger, promoting energy efficiency through appliance and building standards, developing energy technologies and supporting renewable energy, and planning for and directing the state response to energy emergencies.

### **California Public Utilities Commission**

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. In 1911, the CPUC was established by Constitutional Amendment as the Railroad Commission. In 1912, the Legislature passed the Public Utilities Act, expanding the Commission's regulatory authority to include natural gas, electric, telephone, and water companies as well as railroads and marine transportation companies. In 1946, the Commission was renamed the California Public Utilities Commission. It is tasked with ensuring safe, reliable utility service is available to consumers, setting retail energy rates, and protecting against fraud.

### **California Department of Resources Recycling and Recovery**

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, 2019d).

### 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 Central Valley 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 Central Valley RWQCB. However, the project is not expected to discharge waste into the local sewer system, and therefore, is not required to prepare and submit the described report.

### Senate Bills 610 and 221

Passed in 2001, Senate Bill (SB) 610 and SB 221 are companion measures that seek to promote more collaborative planning among local water suppliers and cities and counties. They require that water supply assessment occur early in the land use planning process for all large-scale development projects. If groundwater is the proposed supply source, the required assessments must include detailed analyses of historic, current, and projected groundwater pumping and an evaluation of the sufficiency of the groundwater basin to sustain a new project's demands. They also require an identification of existing water entitlements, rights, and contracts and a quantification of the prior year's water deliveries. In addition, the supply and demand analysis must address water supplies during single and multiple dry years presented in five-year increments for a 20-year projection. In accordance with these measures, a Water Supply Assessment was prepared for the project as it is an industrial use of more than 40 acres (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] 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 construction and demolition (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 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

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

### 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, 2015).

# Kern County Construction Diversion Requirements per the California Green Building Code

As part of compliance with the State of California Green Building Code Requirements (known as CALGreen) that took effect beginning January 2011, Kern County implemented the following construction waste diversion requirements:

- Submittal of a Construction Waste Management Plan prior to project construction for approval by the Kern County Building Department;
- Recycling and/or reuse of a minimum 50 percent of 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 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 and implementation measures in the Kern County General Plan related to utilities and service systems that are applicable to the project are provided below. The Kern County General Plan contains additional policies, goals, and implementation measures that are more general in nature and not specific to development, such as the project. These measures are not listed below, but as stated in Chapter 2,

*Introduction*, all policies, goals, and implementation measures in the Kern County General Plan are incorporated by reference.

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

#### **1.4: Public Facilities and Services**

#### Goals

Goal 1:	Kern County residents and businesses should receive adequate and cost effective public services and facilities. The County will compare new urban development proposals and land use changes to the required public services and facilities needed for the proposed project.
Goal 5:	Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural users within Kern County.
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 approval of any discretionary permit, the County shall make the finding, based on information provided by 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.

### Kern County Integrated Waste Management Plan

The Kern County Public Works Department is required by the State to plan and implement waste management activities and programs in the County unincorporated area to assure compliance with AB 939 and subsequent State mandates. The Kern County IWMP includes a Reduction and Recycling Element, Household Hazardous Waste Element, and Non-Disposal Facility Element. The Plan was approved February 1998 by the California Integrated Waste Management Board (now California Department of Resources Recycling and Recovery or CalRecycle). The Kern County Integrated Waste Management Plan (IWMP) is the long-range planning document for landfill facilities.

# 4.17.4 Impacts and Mitigation Measures

### Methodology

Potential impacts to utilities and service systems associated with construction and operation of the project were evaluated qualitatively and quantitatively using a variety of resources, including multiple online sources and published documents, as well as the *Pastoria Solar Project Preliminary Floodplain Study and Scour Analysis* (Kasraie, 2019) and the *Water Supply Assessment* (Jacobs, 2019) provided in Appendix K and Appendix N 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 solid waste impacts. The evaluation of impacts is based on professional judgment, analysis of the County's land use policies, and significance criteria established in *CEQA Guidelines* Appendix G, which the County has determined appropriate for the EIR.

# **Thresholds of Significance**

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

A project could have a significant adverse effect on utilities and service systems if it would:

- a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
- c. Result in a determination by the waste water treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals;
- e. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste;

### **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 project would require an estimated 58.6 acre-feet (af) of water over a 12-month construction period for common construction related activities, including but not limited to grading, soil compaction, dust suppression, concrete manufacturing, truck wheel washing, equipment washing, and fire safety. Water required during construction would be supplied by the existing four turnouts that border the site and contain imported SWP surface water; water is not expected to require treatment for construction use. Potable water supply would not be required during construction, as restroom facilities would be provided by portable units to be serviced by licensed providers, and bottled potable water would be provided to workers. For these reasons, project construction would not require or result in the construction of any new water facilities that could cause significant environmental effects and, thus, impacts during construction would be less than significant.

#### **Wastewater Treatment**

Construction of the project would generate a minimal volume of wastewater. During construction activity, wastewater would be contained within portable toilet facilities and disposed of at an approved disposal site. The Kern County Environmental Health Services Division is responsible for monitoring the use of portable toilet facilities, and a condition of approval would require the project proponent to provide documentation of a portable toilet pumping contract. No offsite sewage or disposal connections to a municipal sewer system exist or are proposed for construction and, thus, impacts during construction would be less than significant.

#### Stormwater Drainage

Water used during construction would runoff on the project site, which, as previously mentioned, has no defined or constructed drainage facilities. As a result, surface runoff events would generally be brief and infrequent, with rapid infiltration into the sandy substrate, and/or shallow ponding in low-lying areas quickly followed by high evaporation. There are no constructed stormwater drainage systems present onsite and stormwater on the project site either percolates onsite or drains offsite by way of existing ephemeral drainages. Project activities during construction are not expected to substantially alter the ground surface such that new stormwater drainage facilities would be required and impacts would be less than significant. Furthermore, as described in Section 4.7, *Geology and Soils*, of this EIR, Mitigation Measure MM 4.7-3 would require the implementation of a Stormwater Pollution Prevention Plan (SWPPP) during construction, which would include best management practices (BMPs) designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality. The project would also comply with the NPDES General Construction Permit." Implementation of Mitigation Measure MM 4.7-3 would further reduce impacts. No offsite connections to a municipal storm water facility exist or are proposed and, thus, impacts during construction would be less than significant.

#### **Electric Power**

No electrical facilities are located on the project site as the project site is currently vacant. Electricity is not expected to be consumed in large quantities during project construction, as construction equipment and vehicles are not electric (diesel- or gas-powered) and no electricity is expected to be consumed for water use during construction. The project is in PG&E's service territory. Electric power for construction would be brought to the site through a new PG&E service connection. 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. During construction, installation of the new electrical infrastructure would create a temporary environmental disturbance; however, since the electrical power lines are typical overhead distribution lines, the impact would be less than significant.

#### **Natural Gas**

No natural gas pipelines are located on the project site, nor would natural gas be required for project construction. Therefore, relocation or construction of new or expanded natural gas facilities would not be required and no impacts would occur.

#### Telecommunications

No existing telecommunication facilities are located onsite, other than the existing third-party microwave repeater in the northeastern corner of the site that is not part of the project. During construction, cellular or satellite communication technology may be used for both internet and telephone systems. Alternatively, a communication line would be connected to the site on the PG&E power supply poles or the generator tie line structures. No off-site telecommunications systems would be constructed and, therefore, impacts would be less than significant.

#### Operation

#### Water

During project operation, panel washing activities up to twice a year would generate a long-term operational water demand of approximately 1.53 afy. Water for panel washing is expected to come from the existing distribution lines that contain imported SWP surface water and, thus, no new water supply infrastructure would be required for operational functions. The project proponent has entered into a water supply agreement with TCWD for up to 2 afy. KCWA deliveries from SWP facilities are expected to be approximately 600,000 afy over the long term, which is substantially more than the project water use. TCWD and KCWA supplies are reliable given the long-term SWP reliability (Jacobs, 2019). For these reasons, the project would not require or result in the construction of new water facilities which could cause significant environmental effects and, thus, impacts during operations and maintenance would be less than significant.

#### Wastewater Treatment

The project would not introduce permanent employees onsite or construct permanent wastewater generating facilities; therefore, wastewater would not be generated during operation. The project would not require new wastewater treatment facilities to be constructed and operational impacts would be less than significant.

#### Stormwater Drainage

There are no constructed stormwater drainage systems present onsite. The design of the proposed project is such that storm water would remain onsite and infiltration and runoff would occur similar to existing conditions. Under existing conditions, water moves through the project site via ill-defined ephemeral drainage channels and via sheet flow under heavier precipitation events. Project activities are not expected to substantially alter the ground surface such that new stormwater drainage facilities would be required. As discussed in Section 4.10, *Hydrology and Water Quality*, of this EIR, Mitigation Measure MM 4.10-1 would be implemented as a part of the project and requires preparation of a drainage plan to reduce potential increases in stormwater runoff onsite and would detail any necessary physical structures required to control stormwater. These structures would be developed onsite along with the rest of project construction. No offsite disposal connections to a municipal stormwater facility exist or are proposed and, thus, impacts during operation and maintenance would be less than significant.

#### **Electric Power**

Project operation would generate 115 MW of renewable electrical energy that would help to reduce or offset electricity on the state-wide utility grid. The existing infrastructure (associated with the gen-tie and substation option) has adequate capacity to accept the additional 115 MW that would be generated by the project without modifications. The direct current (DC) power generated by the solar arrays would be transmitted using electric lines held in cable trenches or aboveground cable trays, to inverters, where it would be converted to alternating current (AC) power for delivery to the grid. The inverter would be enclosed in metal cases and mounted on concrete slabs and would be dispersed among the arrays. The AC power from the inverters would be transmitted to the on-site switch gear by underground lines. The substation required to step up the power generated by the project to transmission voltage would be located on the eastern property line. The substation would occupy an area that would be approximately 200 feet by 200 feet in size (0.92 acres). Transformers would be in a concrete-lined basin that is designed to contain any fluid spills. The substation would be surrounded by a 6-foot-high chain link fence topped with 12 inches of barbed wire, and its ground surface would be covered with gravel. Lighting would be installed in the substation for security and for use at times when nighttime emergency repair work is required.

A 220 kV generator tie-line would extend from the onsite substation due east for 0.5 miles to connect with the PEF. From this point, power would be transmitted to the SCE grid at the Pastoria Substation through an existing line. The project's gen-tie line would cross under the existing transmission corridor that is between the project site and the PEF. The project would not require an expansion of the existing PEF or the existing Pastoria Substation.

The project is in PG&E's retail electric service territory. Station Power for operations would be brought to the site through a new PG&E retail electric service connection. 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. Because the project would require PG&E retail electric service from a typical overhead distribution line, the impact would be less than significant.

#### Natural Gas

The project would not require or result in the construction of new gas facilities which could cause significant environmental effects and, thus, no impacts during operation and maintenance would occur.
#### **Telecommunications Facilities**

During operations, it is expected that there will be a communications circuit, likely a fiber optic line, connecting to the project substation designed to handle communication data traffic associated with system protection, monitoring, and control required by SCE as the transmission provider and the California Independent System Operator (CAISO) as the Balancing Authority. This line will be co-located with the gen-tie structures or PG&E commercial power poles.

This communication circuit would also handle communications for the Supervisory Control and Data Acquisition (SCADA) data traffic for the plant's remote operator station located off-site. During operations, there may also be redundant wireless systems to provide a second means of communication. Solar panels will be controlled using wireless signals and underground fiber-optic cable. No off-site telecommunications systems would be constructed and, therefore, impacts would be less than significant.

#### Mitigation Measures

Implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1 would be required (see Sections 4.7, *Geology and Soils*, and 4.10, *Hydrology and Water Quality*, for full mitigation measure text).

#### Level of Significance after Mitigation

With implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1, impacts would be less than significant.

# Impact 4.17-2: The project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

Water requirements for the project during construction and operation were determined in the *Water Supply Assessment* prepared for the project (see Appendix N of this EIR). The project's construction water demand is estimated to be 58.6 afy for a 12-month construction period and approximately 1.53 afy for the operational life of the project (approximately 35 years). Bottled potable water for drinking and domestic use during construction, operation, and decommissioning would be trucked in to the project site. The water quantity required during decommissioning is unknown at present but is anticipated to be similar to construction, operation, and decommissioning would be supplied by the existing distribution lines. The project proponent has entered into an agreement with TCWD for up to 2 afy. TCWD is in contract with KCWA, a regional wholesale agency, for use of the SWP water. KCWA has a contract with DWR for up to 982,732 afy. In 2016, KCWA obtained 423,109 af and is expected to receive a total of 687,911 af for 2019 (Jacobs, 2019).

SWP deliveries to KCWA have varied over the years and in the last 20 years has been as low as 423,109 af (2016) and as much as 1,400,000 af (2006) (Jacobs, 2019). However, over the long term, KCWA deliveries from SWP facilities are expected to total approximately 600,000 afy. In addition, KCWA and TCWD have available resources to meet demands through non-SWP deliveries, as necessary. The operational demand of the project is a small fraction of the total supply available and with the flexibility of available water supply sources there is sufficient supply to meet the project demands (Jacobs, 2019). SWP deliveries under its long-term water contracts average 2,571,000 afy, which is approximately 62 percent of the total amount of all the SWP water contracts. This represents the availability of SWP water in normal years. In addition, DWR publishes estimates of water availability for a single dry-year scenario and three categories of

multiple dry-year scenarios. Total SWP water contract deliveries under single- and multiple-dry year scenarios are presented in **Table 4.17-2**, *Estimated Dry-Period Deliveries of SWP Long-Term Contract Water*, which reflects the variability of SWP deliveries to KCWA.

Single Dry Year (1977)		2-Year Drought (1976–1977)		4-Year Drought (1931–1934)		6-Year Drought (1987–1992)	
336	8%	1,206	29%	1,396	34%	1,203	29%
OTE:							
mounts pro	esented in tho	usand acre-feet p	er year and as p	ercentage of max	imum water con	tract amount.	

	T	D D-		<b>T</b>	C
<b>TABLE 4.17-2:</b>	ESTIMATED L	DRY-PERIOD DE	LIVERIES OF SWP	LONG-TERM	CONTRACT WATER

Amounts presented in thousand acre-feet per year and as percentage of maximum water contract amount. SOURCE: Jacobs, 2019

Based on estimated project water demands, the commitment from TCWD to supply the project with water with SWP water, and data supporting the availability of SWP water, there is sufficient water available to meet the future water demands of the project during normal, single dry, and multiple dry years through the life of the project. Therefore, impacts related to water supply would be less than significant.

#### Mitigation Measures

No mitigation would be required.

#### Level of Significance

Impacts would be less than significant.

# Impact 4.17-3: The project would 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 generated by the project would be disposed of by a contractor at an approved offsite location. 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. Currently, the project site is vacant and contains no development and, therefore, development would not require demolition or removal of large debris. Materials brought to the project site would be used to construct facilities, and few residual materials are expected. Solar modules would be delivered to the site via shipping containers packaged in wood and cardboard materials. The shipping containers for module deliveries would be recycled and are not anticipated to generate non-recyclable waste. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. Any hazardous waste generated during construction would be disposed of at an approved location.

Non-hazardous construction refuse and solid waste would either be collected and recycled or disposed of at a transfer station or local landfill. The Lebec transfer station (approximately 9 miles to the southwest of project site) is the closest landfill to the project site and, therefore, would be the most likely recipient of project site solid waste prior to disposal at the Taft Landfill. The Taft Landfill has a remaining capacity of 7,380,708 cy with an anticipated closure year of 2076 (CalRecycle, 2019). The landfill is a Class III landfill and, therefore, accepts 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 to existing landfills are anticipated to be less than significant.

#### Operation

During operation, little to no solid waste would be generated. The only waste generated onsite would result from maintenance activities which are anticipated to be relatively minor. No permanent employees would be required onsite. 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 generated during project operation, thereby further reducing solid waste generated during operation. Therefore, impacts related to landfill capacity would be less than significant.

#### Decommissioning

Solar PV panels have a lifespan of over 35 years, after which the land could be converted to other uses in accordance with applicable land use regulations in effect at that time. Solar PV panels contain valuable materials that would likely be reused and recycled at the end of their useful life. Solar panel manufacturers have identified that approximately 90 percent of materials in solar panel modules can be recycled. Decommissioning of the gen-tie line route would not generate substantial amounts of solid waste. As stated above, the Taft Landfill is expected to be in operation through 2076 and would serve as a solid waste disposal location during project decommissioning. Per Mitigation Measure MM 4.17-1, a collection and recycling program would be implemented during decommissioning to recycle project components and minimize disposal of project components in landfills. Following decommissioning, the project site would be returned to predevelopment conditions and would not generate waste. Therefore, impacts related to

landfill capacity would be less than significant during decommissioning with the implementation of Mitigation Measure MM 4.17-1.

#### **Mitigation Measures**

- **MM 4.17-1:** During construction, operation, and decommissioning, debris and waste generated shall be recycled to the extent feasible. The provisions listed below shall apply to the project:
  - a. A Recycling Coordinator shall be designated by the project proponent/operator to facilitate recycling as part of the Construction, Operation and Maintenance, and Decommissioning, Trash Abatement and Pest Management Program.
  - 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 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 and decommissioning. A site plan showing the recycling storage area for construction 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, operation and maintenance, and decommissioning. Common construction waste may include metals, masonry, plastic pipe, rocks, dirt, cardboard, or green waste related to land development. The 1989 California Integrated Waste Management Act (AB 939) requires Kern County to attain specific waste diversion goals. In addition, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project. In 2011, the State passed AB 341, which established a policy goal that a minimum of 75 percent of solid waste must be reduced, recycled, or composted by the year 2020. In addition, as part of compliance with CALGreen requirements, Kern County implements the following construction waste diversion requirements:

- Submittal of a Construction Waste Management Plan
- Recycle and/or reuse a minimum 65 percent C&D waste; and
- Recycle or reuse 100 percent of tree stumps, rocks, and associated vegetation and soils resulting from land clearing.

Furthermore, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. Implementation of Mitigation Measure MM 4.17-1 would ensure compliance with all waste diversion and recycling requirements by requiring recycling during construction, operation, and decommissioning of the project. The project would be required to comply with all federal, State, and local statutes and regulations related to the handling and disposal of solid waste. Therefore, implementation of the project would result in less-than-significant impacts.

#### **Mitigation Measures**

Implementation of Mitigation Measure MM 4.17-1 would be required.

#### Level of Significance after Mitigation

With implementation of the Mitigation Measure MM 4.17-1, impacts would be less than significant.

## **Cumulative Setting, Impacts, and Mitigation Measures**

Past, present, or reasonably foreseeable future projects within the southern San Joaquin Valley are listed in Table 3-3 in Chapter 3, *Project Description*, of this EIR. The geographic scope for impacts to utilities and service systems includes projects within the service area for each of the utility providers described above, which includes demands on water supply, wastewater, stormwater drainage, and solid waste disposal. The scope for impacts to water and wastewater includes projects within the KCWA service area. The scope for impacts to stormwater drainage and solid waste disposal includes projects that rely on the same infrastructure and solid waste disposal facilities. Impacts of the project would be cumulatively considerable if the incremental effects of the project when combined with other past, present, or reasonably foreseeable projects would result in a significant cumulative effect.

As described in Chapter 3, *Project Description*, of this EIR, a surface mining expansion project and the Grapevine Specific & Community Plan are proposed in the project vicinity that would likely have varying demands on water, waste water, stormwater drainage, electric power, natural gas, and telecommunication facilities as well as water, wastewater, and solid waste resources.

#### Water Supply

As described under Impact 4.17-2, the project would need minimal water supply during construction, operation, and decommissioning. KCWA would continue to supply SWP water and would have an ability to meet demands during low SWP delivery periods with non-SWP water. Therefore, there should be sufficient supply to meet the cumulative demand and the project's contribution would not be cumulatively considerable.

#### Wastewater

With regard to wastewater, the project is located in an area with no wastewater treatment provider and is not expected to generate a significant amount of wastewater. Wastewater produced during construction would be collected in portable toilet facilities and disposed of at an approved facility. Bottled potable water would be trucked to the site during construction. Therefore, the project would not substantially contribute to a cumulative impact on regional wastewater treatment facilities or capacity.

#### **Stormwater Drainage**

As described above, no constructed stormwater drainage systems are present onsite and stormwater on the project site either percolates onsite or drains offsite by way of existing ephemeral drainages. Project activities are not expected to substantially alter the ground surface such that new stormwater drainage facilities are needed. Nonetheless, Mitigation Measure MM 4.10-1 would be implemented as a part of the project and requires preparation of a drainage plan to reduce potential increases in stormwater runoff onsite and would detail any necessary physical structures required to control stormwater. These structures would be developed onsite along with the rest of project construction. Surrounding projects would also be required to prepare a drainage plan in accordance with Kern County Development Standards and Kern County Code of Building Regulations, that would help avoid substantial increases of stormwater generated onsite by their proposed ground disturbance; depending on the findings of their drainage plan, these projects may need to construct stormwater control structures onsite to reduce the potential for increased stormwater runoff. Additionally, as with the project, all projects that would not retain all runoff onsite would be required to prepare a SWPPP, per Mitigation Measure MM 4.7-3, which would include BMPs designed to prevent the mixture of sediment and other pollutants with stormwater and degrading water quality. Therefore, the project would not contribute to cumulatively considerable impacts related to stormwater drainage facilities.

#### Electricity

The project would include construction of a gen-tie that would tie into existing facilities and provide renewable electrical energy and energy storage capacity to the state-wide utility grid. Electricity demand of the project would be minimal during construction and operations and would be provided by the onsite PV and battery system and the commercial grid, as needed. The project is located in PG&E's service territory. Electric power for construction and station power for operations would be brought to the site through a new PG&E service connection. This project, as an energy producing facility, would also serve to reduce or offset electricity on the state-wide utility grid and therefore provide a beneficial cumulative impact on electrical demand and facilities.

#### **Natural Gas**

The project does not include the relocation of existing natural gas facilities on the project site and natural gas would not be required for operation of the project. Therefore, the project would not contribute to a cumulatively considerable impact related to natural gas demand and facilities.

#### Telecommunications

The 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

The project would generate a minimal amount of solid waste. The Taft Landfill is not expected to cease operation until 2076. To ensure that the project reduces the amount of waste sent to the landfill,

implementation of Mitigation Measure MM 4.17-1 requires that debris and waste generated shall be recycled to the extent feasible, and a recycling coordinator be designated by the project proponent to facilitate recycling efforts. Surrounding projects would also be required to comply with all applicable ordinances in place designed to reduce the amount of solid waste disposed in landfills. Therefore, the project would not contribute to a cumulatively considerable impact related to landfill capacity exceedance.

In conclusion, the project would be self-contained and 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 4.7-3, 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**

Implementation of Mitigation Measures MM 4.7-3, MM 4.10-1, and MM 4.17-1 would be required (see Sections 4.7, *Geology and Soils*, and Section 4.10, *Hydrology and Water Quality*, for full mitigation measure text).

#### Level of Significance

With implementation of Mitigation Measures MM 4.7-3, MM 4.10-1, and MM 4.17-1, cumulative impacts would be less than significant.

This page intentionally left blank

# 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 review of the project plans, information from the California Department of Forestry and Fire Protection (CAL FIRE), and CAL FIRE Kern County Fire Hazards Severity Zone (FHSZ) Maps and the *Botanical Resources Survey Report for the Pastoria Solar Project* (Jacobs, 2019), provided in Appendix C and *Phase I Environmental Site Assessment and Limited Soil Sampling* (SCS Engineers, 2019) provided in Appendix J of this EIR.

# 4.18.2 Environmental Setting

# Site Characteristics and Fire Environment

The project site consists of undeveloped agricultural lands used for grazing. The surrounding land is used for almond and pistachio, vineyards, and grazing land. CAL FIRE identifies FHSZs, based on factors such fuel, slope, and fire weather, to identify the degree of fire hazard throughout California (i.e., moderate, high, or very high). While FHSZs do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and, therefore, are of greater concern. According to the CAL FIRE, Kern County FHSZ Maps for the Local Responsible Areas (LRA), and as shown in Figure 4.18-1, Fire Hazard Severity Zones for Local Responsibility Areas, the project site is classified as LRA Unzoned. Given this designation, the project site is outside of areas identified by CAL FIRE as having substantial or very high risk. Further, according to the CAL FIRE Kern County FHSZ Maps for the State Responsible Areas (SRA), and as shown in Figure 4.18-2, Fire Hazard Severity Zones for State Responsibility Areas, the project site is not within a SRA or Federal Responsibility Area (FRA). The land immediately surrounding the project site consist largely of agriculture with a mix of row crops and grazing land. The Pastoria Energy Facility (PEF) is located approximately 0.5 miles east of the project site, the Edmonston Pumping Plant is located approximately 0.8 miles southeast of the project site, and a gravel quarry is located about 0.8 miles southeast of the project site. An existing transmission corridor is between the project site and the PEF. The land immediately to the east of the project site is categorized as SRA Moderate. The land immediately to the north, south, and west is categorized as LRA Unzoned (see Figures 4.18-1 and 4.18-2). The nearest Very High Fire Hazard Severity Zone (VHFSZ) is located approximately 5.19 miles southwest if the project site. In addition, the Kern County Fire Department (KCFD) Wildland Fire Management Plan designates a majority of the project site as being located within an Agriculture/Non-Wildland by the County with a small area of the eastern parcels and gen-tie lines within a moderate fire hazard severity zone (KCFD, 2009).



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.18-1: FIRE HAZARD SEVERITY ZONES FOR LOCAL RESPONSIBILITY AREAS



#### KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT PASTORIA SOLAR PROJECT



#### FIGURE 4.18-2: FIRE HAZARD SEVERITY ZONES FOR STATE RESPONSIBILITY AREAS

# **Fire History**

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources. Fire history represented in this section uses CAL FIRE's California Statewide Fire Map that shows fires back through 2013 (CAL FIRE, 2019a) and CAL FIRE's Fire and Resource Assessment Program (FRAP) database (CAL FIRE, 2019b). Based on a review of these maps, no fires in the recorded history have burned across the project site.

# **Vegetation (Fuels)**

The project site currently contains 647 acres of grassland as described in Section 4.4, *Biological Resources*. Acreages of vegetation communities and land cover types are provided in **Table 4.18-1**, *Vegetation Community or Land Cover Types in the Study Area*. The acreage of these areas exceeds the proposed project acreage because they include adjacent lands.

Vegetation Community or Land Cover Type	Percent Coverage (%)
Avena barbata Slender Oak	50%
Bromus diandrus Ripgut brome	25%
Bromus madritensis ssp. rubens Red brome	
Bromus tectorum Cheatgrass	
Festuca myruros Rattail Fescue	
Erodium cicutarium Redstem stork's bill	>1%
Brassica nigra Black mustard	
Medicago polymorpha Burclover	
Lupinus benthamii Spider lupine	<1%
Lupinus microcarpus Valley lupine	
SOURCE: Jacobs, 2019.	

 TABLE 4.18-1: VEGETATION COMMUNITY OR LAND COVER TYPE IN THE STUDY AREA

# 4.18.3 Regulatory Setting

# Federal

There are no applicable federal regulations for this issue area.

# State

## 2016 California Fire Code

The 2016 California Fire Code (Title 24, Part 9, of the California Code of Regulations) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. Chapter 6 (Building Services and Systems) of the Code focuses on building systems and services as they relate to potential safety hazards and when and how they should be installed. Building services and systems are addressed include emergency and standby power systems, electrical equipment, wiring and hazards, and stationary storage battery systems. Chapter 33 (Fire Safety During Construction and Demolition) of the Code outlines general fire safety precautions to maintain required levels of fire protection, limit fire spread, establish the appropriate operation of equipment and promote prompt response to fire emergencies. The Fire Code includes regulations regarding fire-resistancerated construction, fire protection systems such as alarm and sprinkler systems, fire service features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

## 2016 California Building Code, Chapter 7A

Chapter 7 of the 2016 California Building Code details the materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a Wildland-Urban Interface Fire Area. A Wildland-Urban Interface Area is defined in Section 702A as a geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201–4204 and Government Code Sections 51175–51189, 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 Sections 4291–4299

California Public Resources Code Sections 4291–4299 et seq. requires that brush, flammable vegetation, or combustible growth within 100 feet of buildings be maintained. Vegetation that is more than 30 feet from the building, less than 18 inches high, and is important for soil stability may be maintained, as may single specimens of trees or other vegetation that is maintained to manage fuels and not form a means of rapid fire transmission from other nearby vegetation to a structure. California Public Resources Code Sections 4291–4299 et seq. applies to both high fire threat districts, as determined by the California Public Utilities Commission pursuant to its rulemaking authority, and SRAs. Additionally, the Public Resources Code outlines infraction fees, certification, and compliance procedures applicable with state and local building standards, including those described in Government Code Section 51189(b).

### Local

#### Kern County General Plan

Chapter 4: Safety Element

#### 4.6: Wildland and Urban Fire

Policies

Policy 1	Require discretionary projects to assess impacts on emergency services and facilities
Policy 4	Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.
Policy 6	All discretionary projects shall comply with the adopted Fire Code and the requirements

# of the Fire Department.

#### Implementation Measures

Measure A Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

#### Kern County Fire 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 areas. 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. As defined by the KCFD Wildland Fire Management Plan, the majority of the project site is located within an Agriculture/Non-Wildland by the County with a small area of the eastern parcels and gen-tie lines within a moderate fire hazard severity zone (KCFD, 2009).

#### Kern County Fire Code

Chapter 17.32 of the Kern County Municipal Code details the Kern County Fire Code, which is an adoption of the 2016 California Fire Code and the 2015 International Fire Code with some amendments. The purpose of the Kern County Fire Code is to regulate the safeguarding of life, property, and public welfare to a reasonable degree from the hazards of fire, hazardous materials release and/or explosion due to handling of dangerous and hazardous materials, conditions hazardous to life or property in the occupancy and use of buildings and premises, the operation, installation, construction, and location of attendant equipment, the installation and maintenance of adequate means of egress, and providing for the issuance of permits and collection of fees therefore.

#### Kern County Fire Department Unit Strategic Fire Plan

The KCFD Unit Strategic Fire Plan, adopted in March 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 5 (Mt. Pinos Communities), which is not within a fire hazard severity zone within the Mt. Pinos Communities fire plan management area (KCFD, 2018).

#### Fire Prevention Standard No. 503-507 Solar Panels

The KCFD Fire Prevention Division adopted Standard No. 503-507 Solar Panels (Ground Mounted, Commercial & Residential) on March 27, 2019. The standard is implemented in accordance with the 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, 2019).

# 4.18.4 Impacts and Mitigation Measures

# Methodology

Wildfire impacts are considered on the basis of: (1) offsite wildland fires that could result due to the proposed project, and (2) onsite generated combustion that could affect surrounding areas. The proposed project's potential impacts associated with wildfires have been evaluated using a variety of resources, including CAL FIRE maps showing FHSZs, FRAP and fire history, vegetation data from the *Botanical Resources Survey Report* (Jacobs, 2019) and *Phase I Environmental Site Assessment and Limited Soil Sampling* (SCS Engineering, 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 *CEQA Guidelines* Appendix G, 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 VHFSZs, and if the project would:

- a) Substantially impair an adopted emergency response plan or emergency evacuation plan;
- b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
- c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or
- d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire 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. In addition, 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 physical interference 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 and can influence the spread of fires. Upslope topography eventually increases the spread rate of the fire in all fuel beds over flat conditions (International Journal of Wildland Fire 2002, 2010). As described in Chapter 3, *Project Description*, elevations across the project site range from approximately 1,160 feet above mean sea level (amsl) to 1,040 feet amsl. The project site has low topographic relief and is relatively flat. The project would introduce temporary onsite employees during construction and two intermittent onsite employees during operation. The project site is designated as LRA Unzoned, which are considered areas with low fire frequency. The potential for wildfire on the project site is not considered high.

During construction, the project 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, the project site's flat topography, and adherence to applicable existing regulations, codes and ordinances, impacts would be less than significant.

Once operational, employees would not be on site daily. As discussed above, the project would require two employees onsite intermittently every month (less than four trips a week) to perform maintenance duties, which limits the ability expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors. Further, the project site is not located adjacent to populated communities. Therefore, the proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors. Further, the project site is not located adjacent to populated communities. Therefore, the proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors, and impacts would be less than significant.

In addition, construction and operational impacts would be further reduced with implementation of Mitigation Measure MM 4.14-1. As discussed in Section 4.14, Public Services, the project proponent/operator shall develop and implement a Fire Safety Plan that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code for use during construction, operation and decommissioning, per implementation of Mitigation Measure MM 4.14-1. Under this Fire Safety Plan, construction and maintenance personnel would be trained and equipped to extinguish small fires, thus reducing the risk of fire on site. In addition, emergency contact information would be posted outdoors in an easily visible place and its location would be shared with all contractors during the required initial safety training before any worker is allowed on site. Signage would be posted around the solar collection units, combiner boxes, disconnect switches and inverters, clarifying dangers and shock hazards. All National Electric Code regulations governing PV systems signage would be followed. In case of emergency, the entire plant would be shut off using a utility disconnect. The site utility disconnect would be located on the transformer pad and in an area that is accessible at all times. Master switch operation would require site access through the main gate only. Thus, with implementation of Mitigation Measure MM 4.14-1, potential impacts related to spread of a wildfire would be further reduced. 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 during construction. Impacts would be less than significant.

#### **Mitigation Measures**

Implementation of Mitigation Measure MM 4.14-1 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts would be less than significant.

# Impact 4.18-3: 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.

Development of the project would include a battery energy storage system (BESS) which, while they generally burn with difficulty, can 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 effective in extinguishing battery fires. Class D extinguishers are used for lithium-metal fires only. To further increase safety, the battery units are usually low voltage, encased in a steel enclosure and are set apart from combustible materials. The BESS would also have a fire rating in conformance with County standards and specialized fire suppression systems installed for the battery rooms. All non-battery rooms would have County-approved standard sprinkler systems. The structure would also have HVAC cooling in the battery room to further maintain cool temperatures within the unit.

New internal roads would be constructed to serve as access roads from the existing road network to the solar array blocks. All road improvements would be completed per Caltrans and/or County code and regulations. These roads would be cleared and compacted for equipment and emergency vehicle travel and access to the solar blocks. These project site access roads would remain in place for ongoing operations and maintenance activities after construction is completed. 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.

Fires in rural agricultural areas could be caused by natural sources, such as lightning, or vehicles. The use of maintenance vehicles can increase fire risk due to driving heated mufflers over vegetated areas. The installation of the gen-tie and electrical collector system and internal/perimeter maintenance roads would not be placed within a high fire hazard zone, and 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 4.14-2. 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

Implementation of Mitigation Measure MM 4.14-1 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.14-1, impacts would be less than significant.

# Impact 4.18-4: The project would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes.

Development of the proposed project would maintain the existing drainage pattern. The project would require implementation of a stormwater pollution prevention plan (SWPPP), which would include erosion and sediment control best management practices (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 on site, albeit in minor quantities compared to existing conditions. However, this could exacerbate potential erosion and sedimentation on site or downstream. As discussed in Section 4.10, Hydrology and Water Quality, Kern County requires development of a drainage plan with the site development grading permit, which will manage stormwater and reduce the risk for offsite impacts due to erosion and impacts on water quality, as implemented by Mitigation Measure MM 4.10-1. Design measures are intended to minimize or manage flow concentration and changes in flow depth or velocity so as to minimize erosion, sedimentation, and flooding on or off site. The drainage plan would include engineer recommendations meant to offset increases in stormwater runoff and would incorporate them into the project design. Since the project site is entirely undeveloped under existing conditions, the project would result in a small net increase in the amount of impervious surfaces as a result of constructing equipment foundations, and energy storage facilities foundations. The access roads would not be paved or graveled and therefore would not increase impervious surface areas within the project site. However, a majority of the project site would remain pervious. Implementation of Mitigation Measure MM 4.10-1 would minimize potential increases in runoff and ensure that the retention basins and other stormwater management features are implemented to minimize erosion and sedimentation.

The project site is located north of the Tehachapi Mountains, between the Grapevine and Pastoria Creek watersheds in the very southern end of the Central Valley and is relatively flat to gently sloping open grassland. Based on the fire history immediately surrounding the site, LRA Unzoned designation, soil types, and surface hydrology, there is a low potential for the project site to be at risk of post-fire instability or drainage changes.

While the project would introduce new structures to the project site, the structures would not be placed in a highly flammable landscape. Furthermore, with the implementation of Mitigation Measure MM 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

Implementation of Mitigation Measure MM 4.10-1 would be required.

#### Level of Significance after Mitigation

With implementation of Mitigation Measure MM 4.10-1, impacts would be less than significant.

# **Cumulative Setting, Impacts, and Mitigation Measures**

The geographic scope for cumulative wildfire impacts is considered the southern San Joaquin Valley. This geographic scope was selected because the land within the region possess relatively similar uses and environment, including agriculture, highway commercial, rural residential, mineral extraction, electrical power generation, and undeveloped grasslands.

With regard to impairment of an adopted emergency response plan or emergency evacuation plan, all of the related projects would be required to provide adequate emergency access in accordance with County Fire Code and Building Code requirements and prior to the issuance of a building permit. Although the future implementation of the Grapevine Specific and Community Plan (2019) would provide emergency access and infrastructure within the project vicinity, the project be constructed prior to the development of infrastructure for the Grapevine Specific Plan area. As concluded in the discussion of project impacts above, the project would have a less-than-significant impact related to impairment of an adopted emergency response or evacuation plan. Nevertheless, given the location in a rural area and limited infrastructure related to fire suppression such as high pressure water systems and paved access roads to the site, the project and related projects have the potential to result in a cumulative impact to an adopted emergency response plan or emergency evacuation plan and, thus, would result in a significant and unavoidable cumulative impact.

With regard to cumulative impacts related to exposure of project occupants to pollutant concentrations from a wildfire, while the proposed project is not within a LRA, SRA, or FRA identified as having substantial or very high fire risk, some related projects in the area may be. Similar to the proposed project, all related projects would be required to implement a Fire Safety Plan similar to the one required by Mitigation Measure MM 4.14-1 and would be required to implement building and landscape design features in accordance with the Fire Code and Building Code to reduce wildfire risk and exposure of occupants to pollutant concentrations from a wildfire. Adherence to the Fire Code and Building Code requirements would minimize potential impacts related to exposure to and the uncontrolled spread of a wildfire. As concluded in the discussion of project impacts above, the project would have a less-than-significant impact related to exposure of a wildfire. Nevertheless, given the location in a rural area and limited infrastructure as discussed above, the project and related projects have the potential to result in a cumulative impact related to exposure of project occupants to pollutant concentrations from a wildfire and, thus, would result in a significant and unavoidable cumulative impact.

Related projects may require associated infrastructure such as roads, fuel breaks, and power lines that could exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. These projects would be reviewed by Kern County for land use and zoning consistency and compliance with applicable requirements, and potentially analyzed for environmental impacts. The placement of infrastructure would adhere to all fire codes to minimize the potential fire risk such as siting and design. The project would include the construction of either a gen-tie line or a collection line, an overhead and underground collection system, an energy storage facility, and internal and external roads. While the potential for fire is considered low, Mitigation Measure MM 4.14-1 would be implemented to ensure that a Fire Safety Plan is prepared that contains notification procedures and emergency fire precautions consistent with the 2016 California Fire Code and Kern County Fire Code for use during construction, operation and decommissioning. Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to the installation or maintenance of associated infrastructure and, thus, would result in a significant and unavoidable cumulative impact.

Some related projects could be proposed in areas that could expose people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire instability. Based on the recent fire events in California, all projects would be required to adhere to Kern County's zoning and land use designations and codes, State and local fire codes, and regulations associated with drainage and site stability. These regulations, policies, and codes would reduce the potential for exposing people or structures to risks from downslope or downstream flooding or landslides as a result of post-fire instability. Each project would require site-specific hydrology and drainage studies for effective drainage design. As concluded in the discussion of project impacts above, with the implementation of Mitigation Measure MM 4.10-1, the project would not expose people or structures to significant risks due to post-fire slope instability or drainage changes and would have a less-than-significant impact. Nevertheless, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in a cumulative impact related to exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes and, thus, would result in a significant and unavoidable cumulative impact.

#### Mitigation Measures

Implementation of Mitigation Measures MM 4.10-1 and MM 4.14-1 would be required.

#### 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.

This page intentionally left blank

# 5.1 Environmental Effects Found to Be Less than Significant

*CEQA Guidelines* Section 15128 requires that an EIR "contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR."

Kern County has engaged the public in the scoping of the environmental document. Comments received during scoping have been considered in the process of identifying issue areas that should receive attention in the EIR. The EIR's contents were established based on the Notice of Preparation/Initial Study (NOP/IS) located in Appendix A of this EIR that was prepared in accordance with the *CEQA Guidelines* and in consideration of public and agency input received during the scoping process.

Issues that were found to have no impact or less-than-significant impacts do not need to be addressed further in this EIR. Based on the findings of the NOP/IS and the results of scoping, it was determined that the project would have no impact with regard to the following impact thresholds:

- Population and Housing
- Recreation

The NOP/IS determined that the project would require an average of 190 daily onsite construction workers and approximately 400 construction workers at peak construction. The entire construction process is estimated to take approximately 240 construction days, over the course of a 12-month period. It is anticipated that the construction workforce would commute to the site from various local communities and the number of workers expected to relocate to the surrounding area is not expected to be substantial. If temporary housing should be necessary, it is expected that accommodations would be available in the nearby hotels in Bakersfield, Grapevine, or other local communities. Furthermore, during project operation, one to two employees would be onsite intermittently every month (less than four trips a week) to perform maintenance duties. 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:

• Biological Resources;

• Land Use and Planning;

• Cultural Resources;

• Mineral Resources;

- Energy;
- Geology and Soils; •
- Greenhouse Gas Emissions: •
- Hazards and Hazardous Materials; •
- Hydrology and Water Quality; •

- Noise:
- Public Services;
- Traffic and Transportation;
- Tribal Cultural Resources;
- Utilities and Service Systems; and
- Wildfires.

#### 5.2 Significant Environmental Effects that Cannot Be **Avoided**

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 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.

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 4.1-3 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 <b>significant and unavoidable</b> .	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 650 acres of undeveloped land to a solar energy production facility is considered a <b>significant and unavoidable</b> cumulative impact.

SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT **TABLE 5-1:** 

Resources	Project Impacts	Cumulative Impacts	
Agricultural and Forestry Resources	Implementation of the project would require cancellation of a Williamson Act Contract, which is in non-renewal status and set to expire February 28, 2023. No feasible mitigation is available to reduce impacts related to the cancellation of Williamson Act Contracts, therefore, impacts related to the cancellation of an open space contract would be <b>significant and unavoidable</b> .	The project would convert approximately 650 acres of agricultural land to non-agricultural uses. While development of the Grapevine Specific & Community Plan would result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), the proposed project's contribution to the conversion of agricultural land to non-agricultural uses would be cumulatively considerable. The project's incremental effect is cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus cumulative impacts would be significant and unavoidable.	
		The project would result in a significant impact involving the cancellation of an open space contract. Cumulative projects, including the Grapevine Specific & Community Plan, which are subject to Williamson Act Contracts in non-renewal status, would similarly result in conflicts related to cancellation of an open space contract or a Farmland Security Zone contract. As explained above under Impact 4.2-6, no feasible mitigation is available to reduce impacts related to the cancellation of Williamson Act Contracts. The project's incremental effect is cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects and the effects of probable future projects and thus cumulative impacts would be <b>significant and unavoidable</b> .	
Air Quality	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 <sub>2.5</sub> and contribute to the transmission of respiratory diseases like COVID-19. Even with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM <sub>2.5</sub> along with indirect linkages of criteria pollutants and COVID-19, on vulnerable populations would result in <b>significant and unavoidable</b> project level	The project would have cumulatively significant and unavoidable air quality impacts related to consistency with existing air quality plans due to the considerable net increase of criteria pollutants after implementation of mitigation. Although implementation of mitigation would not result in significant temporary levels of NO <sub>X</sub> during construction, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health impacts mentioned. As such, cumulative impacts for criteria pollutants would be considered <b>significant</b> <b>and unavoidable</b> .	

 TABLE 5-1:
 SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT

impacts.

Resources	Project Impacts	Cumulative Impacts	
Biological Resources	There would be no significant and unavoidable project impacts.	As development increases within Kern County, impacts to biological resources within the region are increasing on a cumulative level. When considered with the number of present and reasonably foreseeable future development projects in the Southern San Joaquin Valley, the project would result in a significant and unavoidable cumulative loss of foraging and nesting habitat for special-status species, even with the implementation of project-specific mitigation measures. Additionally, the installation of PV panels has the potential to cause cumulative impacts to migratory birds associated with collisions. The loss of foraging and nesting habitat for special- status species that may utilize habitat on the project site and impacts to migratory birds would result in a <b>significant and unavoidable</b> cumulative impact.	
Wildfire	There would be no significant and unavoidable project impacts.	Given the location in a rural area and limited infrastructure in the project vicinity, the project would have cumulatively <b>significant</b> <b>and unavoidable</b> 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.	

SUMMARY OF SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROJECT **TABLE 5-1:** C

#### 5.3 **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, 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. *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 growthinducing 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. This page intentionally left blank

# 6.1 Introduction

The California Environmental Quality Act (CEQA) requires that an EIR describe a range of reasonable alternatives to the project or to the location of the project that could feasibly avoid or lessen any significant environmental impacts of the project while attaining most of the project's basic objectives. An EIR also must compare and evaluate the environmental effects and comparative merits of the alternatives. This chapter describes alternatives considered but eliminated from further consideration (including the reasons for elimination), and compares the environmental impacts of several alternatives retained with those of the project.

The following are key provisions of the CEQA Guidelines (Section 15126.6):

- The discussion of alternatives shall focus on alternatives to the project or its site that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.
- The No Project Alternative shall be evaluated, along with its impacts. The no-project analysis shall discuss the existing conditions at the time the notice of preparation was published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a "rule of reason." Therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner that fosters meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in *CEQA Guidelines* Section 15126.6(f)(1)) are environmental impacts, site suitability, economic viability, social and political acceptability, technological capacity, availability of infrastructure, General Plan consistency, regulatory limitations, jurisdictional boundaries, and whether the project proponent could reasonably acquire, control, or otherwise have access to an alternative site. If an alternative has effects that cannot be reasonably identified, if its implementation is remote or speculative, and if it would not achieve the basic project objectives, it need not be considered in the EIR.

# 6.1.1 Significant Impacts of the Project after Mitigation

Implementation of the project has the potential to have significant adverse effects on:

- Aesthetics (project and cumulative)
- Agriculture and Forestry Resources (project and cumulative)
- Air Quality (project and cumulative)

- Biological Resources (cumulative only)
- Wildfire (cumulative only)

Even with the mitigation measures described in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*, of this EIR, impacts in these issue areas would be significant and unavoidable. Therefore, per the *CEQA Guidelines*, this chapter discusses alternatives that are capable of avoiding or substantially lessening effects on these resources. The significant and unavoidable impacts of the project are discussed below.

#### Aesthetics

While the visual change associated with project development would be somewhat muted when viewed from a distance of greater than 1 mile, at a 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 Interstate 5 (I-5). Even with distance and diminished visibility, the visual change associated with the introduction of approximately 650 acres of solar development on currently undeveloped grassland terrain would likely attract attention. Further, the introduction of solar panels, a collector substation, the battery energy storage system (BESS), and the gen-tie line would increase the footprint of solar and electrical transmission development in the project area. More importantly, development of the project would expand existing industrial development (i.e., solar and wind developments) present in the San Joaquin Valley. Because solar and other renewable energy developments are not concentrated in the project the vicinity, the project would introduce manufactured elements where they do not currently dominate the landscape, resulting in significant aesthetic impacts. Implementation of Mitigation Measures MM 4.1-1 through MM 4.1-3 would help 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. Nevertheless, even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-3, project level impacts to visual character and quality would remain significant and unavoidable.

Additionally, while other projects in the region would also be required to implement various mitigation measures to reduce impacts associated with visual character and quality, the conversion of land in a presently rural area to solar energy production, mining, commercial and residential uses cannot be mitigated to a degree that impacts are no longer significant. Development of the project would result in significant impacts associated with visual character and quality in the area. Even with implementation of Mitigation Measures MM 4.1-1 through MM 4.1-3, the project's contribution to significant cumulative impacts associated with visual character and quality in the San Joaquin Valley would be significant and unavoidable.

#### Agriculture and Forestry Resources

While the project is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, nor is it Forest land or Timberland, implementation of the project would require the cancellation of a Williamson Act Contract on approximately 650 acres and would convert agricultural (grazing) land to a non-agricultural use. Therefore, the project would require the cancellation of an open space contract made pursuant to the California Lands Conservation Act of 1965 for a parcel over 100 acres. No feasible mitigation is available to reduce impacts related to the cancellation of Williamson Act Contracts, therefore, impacts related to the cancellation of an unavoidable.

Although the conversion of agricultural land to non-agricultural uses is affected by numerous factors, the project's conversion of 650 acres of agricultural land, along with the cancellation of the existing Williamson Act Contract, is cumulatively significant when considered in connection with effects of other closely related past projects, current projects and of probable future projects. Because no feasible mitigation is available, impacts to agricultural resources are considered significant and unavoidable.

# Air Quality

With project implementation, short-term and long-term increases in construction and operational emissions of primary concern within the region (i.e., ROG, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>) would be minimal and would not exceed applicable significance thresholds with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11. As it relates to consistency with air quality plans, as the San Joaquin Valley Air Basin is designated as nonattainment/severe for state 1-hour ozone standards, nonattainment for state 8-hour ozone standards, nonattainment for state 24-hour and annual arithmetic mean for  $PM_{10}$  standards, nonattainment for state annual arithmetic mean for PM2.5 standards, nonattainment/extreme for national 8hour ozone standards, and nonattainment for national 24-hour and annual arithmetic mean for PM2.5 standards. As the project, with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11 would not result in significant temporary levels of  $NO_x$ , CO, and  $PM_{10}$  emissions during construction, the project would not obstruct San Joaquin Valley Air Pollution Control District (SJVAPCD)'s ability to achieve further progress toward attainment of the state standards. However, 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<sub>2.5</sub> and contribute to the transmission of respiratory diseases like COVID-19. Even with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as  $PM_{2.5}$  along with indirect linkages of criteria pollutants and COVID-19, on vulnerable populations would result in significant and unavoidable project level impact. In addition, on a cumulative level, potential cumulative impacts to air quality could occur from construction and operation of the proposed Project in combination with regional growth projections in the same air basin. It is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health impacts mentioned. The SJVAPCD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the San Joaquin Valley Air Basin at the present time and it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health.

#### **Biological Resources**

Given the number of present and reasonably foreseeable future development projects in the Southern San Joaquin Valley, the project, when combined with other projects, would have an incremental contribution to cumulative loss of foraging and nesting habitat for special-status species. Implementation of mitigation measures would reduce impacts to biological resources to less-than-significant levels on the project-level scale. However, the project, when combined with other related development projects proposed throughout the County, the cumulative impact would be significant and unavoidable. In addition, identified cumulative projects that involve the installation of PV panels have the potential to cause impacts to migratory birds associated with collisions. Little is known about the potential for impacts to migratory birds associated with the "lake effect." However, significant impacts to migratory birds could occur due to collision with PV

panels or other project structures causing mortality or injury. Further, as take authorization for migratory bird species is not available, any mortality of migratory birds would be considered significant under CEQA. Therefore, the proposed project, in combination with all identified cumulative projects, would result in a cumulatively significant impact on migratory birds that may remain significant and unavoidable after implementation of mitigation.

#### Wildfire

While the project would not result in impacts related to wildfire, including 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, given the project's location in a rural area and limited infrastructure in the vicinity of the project site, the project and related projects would have a significant and unavoidable cumulative impact related to wildfire.

# 6.2 **Project Objectives**

As described in Chapter 3, *Project Description*, of this EIR the following objectives have been established for the project and will aid decision makers in the review of the project and associated environmental impacts.

- Construct and operate a large-scale solar energy generation facility with a battery energy storage system component to help California advance its Renewable Portfolio Standard (RPS) and energy storage goals;
- Minimize infrastructure needs and reduce potential environmental impacts by locating the facility near existing and planned infrastructure, including access to an existing substation with available transmission capacity;
- Site and design the project in a manner that minimizes potential conflicts with residential, conservation, and agricultural land uses;
- Use proven and established PV and energy storage technologies that are efficient and require low maintenance;
- Assist Kern County in promoting its role as the State's leading producer of renewable energy;
- Provide green jobs in Kern County and the State of California;
- Site and design the project in an environmentally responsible manner to avoid and/or minimize potential impacts, consistent with existing Kern County land use plans; and
- Support California's efforts to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006, which requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under Senate Bill 32, which requires that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit by 2030;
- Support California's aggressive RPS Program consistent with the timeline established by Senate Bill 100 (De León, also known as the "California Renewables Portfolio Standard Program: emissions of greenhouse gases") as approved by the California Legislature and signed by Governor Brown in September 2018, which established a 50 percent RPS goal by December 31, 2026, 60 percent by

December 31, 2030, and a goal that 100 percent of electric retail sales to end-use customers be provided by renewable energy and zero-carbon resources by 2045.

# 6.3 **Overview of the Project**

The project would include the development of a solar facility and associated infrastructure with the capacity to generate up to 115 megawatts (MW) of renewable electric energy and up to 80 MW [320 megawatt-hours (MWh)] of energy storage capacity, including associated energy storage facilities, on 650 acres of privately-owned land in the southern portion of the San Joaquin Valley, in unincorporated Kern County. The project would consist of approximately 350,000 PV panels arranged in a grid-pattern over the project site. The project would include installation of PV panels that would be mounted on steel support posts that would be pile driven into the ground and connected to inverters.

The project consists of two development areas that comprise the project site, the eastern portion of the project site is approximately 325 acres and the western portion of the project site is approximately 324 acres. The BESS and the project substation would be located on an approximately 4.5-acre portion of the project site inside the eastern boundary of the eastern parcels. A 0.5-mile-long generation-tie line (gen-tie) is proposed to electrically interconnect the project to the regional grid system. The gen-tie would run east from the project site to the existing Pastoria Energy Facility (PEF) switchyard from which power would be conveyed through existing conductors to Southern California Edison's (SCE's) Pastoria Substation. The gen-tie facilities would be constructed within the route shown in Chapter 3, *Project Description*, Figure 3-2, *Project Vicinity*, of this EIR. 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 Section 21002.1(a), the identification and analysis of alternatives to a project is a fundamental aspect of the environmental review process and is required to ensure the consideration of ways to mitigate or avoid the significant environmental effects of a project. Based on the significant environmental impacts of the project, the aforementioned objectives established for the project, and the feasibility of the alternatives considered, 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 project versus a No Project Alternative. Accordingly, Alternative 1, the No Project Alternative, assumes that the development of the (up to) 115 MW solar PV facility on the 650-acre site would not occur. The No Project Alternative would not require the General Plan Amendment (GPA), Conditional Use Permit (CUP), and Williamson Act Land Use Contract Cancellation for construction and operation of a 115 MW solar project. The No Project Alternative would maintain the current zoning, land use classifications, and existing land uses, which consist mostly of undeveloped open space and grazing land. No physical changes would be made to the project site.

# 6.4.2 Alternative 2: Agricultural Production Alternative

Alternative 2, the Agricultural Production Alternative, would develop the project site for active agricultural production. The project site is designated as Kern County General Plan map codes 8.1/2.5 (Intensive Agriculture (Min 20 Acres)/Flood Hazard), 8.3/2.5 (Extensive Agriculture (Min 20 Acres)/Flood Hazard), and 8.4/2.5 (Mineral and Petroleum/Flood Hazard).

All four parcels are currently located within the A (Exclusive Agriculture) Zone District. No solar facilities would be developed under this alternative and, therefore, no general plan amendment, Conditional Use Permit, or Williamson Act Contract cancellation would be required for this alternative. The project site would be developed in accordance with the existing agricultural zone designations.

Implementation of Alternative 2 would consist of developing the project site under the current land use classifications of 8.1/2.5 (Intensive Agriculture (Min 20 Acres)/Flood Hazard), 8.3/2.5 (Extensive Agriculture (Min 20 Acres)/Flood Hazard), and 8.4/2.5 (Mineral and Petroleum/Flood Hazard). The 8.1/2.5 (Intensive Agriculture (Min 20 Acres) land use designation applies to areas devoted to the production of irrigated crops or having a potential for such use. Typical uses include irrigated cropland, farm facilities and related uses, livestock grazing, water storage and groundwater recharge areas, mineral, aggregate, and petroleum exploration and extraction, public utility uses, and agricultural industries. The 8.3 land use designation applies to agricultural uses involving large amounts of land with relatively low value per acre yields. Typical uses include livestock grazing, farming and woodlands. The 8.4 land use designation applies primarily to areas which contain producing or potentially productive petroleum fields, natural gas, and geothermal resources, and mineral deposits of regional and Statewide significance. Typical uses include resource extraction. The 2.5 land use designation is an overlay designation that applies to Flood Zones.

Given the land use and zoning designations described above, this alternative would include the development of agricultural production on the entire project site and associated infrastructure for agricultural production such as irrigation systems. No GPA or CUPs for solar facility construction and operation would be required for this alternative. In addition, the Williamson Act Contract, which is set to expire in 2023, would not need to be cancelled under this alternative as the proposed uses would be allowed under this contract.

# 6.4.3 Alternative 3: Reduced Acreage Alternative

Under Alternative 3, the Reduced Acreage Alternative, the eastern parcels would be developed with a solar facility with the capacity to generate up to 86 MW of renewable electric energy. Under this alternative, the southwestern parcel would not be developed for solar energy production and would remain undeveloped for grazing land, as it is currently used. The gen-tie interconnection would remain unchanged. Development of the remaining parcels would include construction of a substation, a BESS, and associated infrastructure, as under the project, and would be located on an approximately 4.5-acre portion of the eastern parcels. Eliminating development of the southwestern parcel from the project would reduce the project's total generation capacity from 115 MW to 86 MW, and reduce the developed area from approximately 650 acres to approximately 486 acres. Similar to the project, this alternative would require a GPA, CUP, and Williamson Act Contract Cancellation for construction and operation of a commercial solar electrical generating facility. The easement on the southwestern parcel would also not be required to be lifted under this alternative.

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

Alternative 4, the No Ground-Mounted Utility-Solar Development Alternative, would involve the development of a number of geographically distributed small to medium solar PV systems (100 kilowatt hours to 1 MW) within existing developed areas, typically on the rooftops of commercial and industrial facilities situated throughout the southern portion of the San Joaquin Valley, within unincorporated Kern County (Southern San Joaquin 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 650 acres of total rooftop area) may be required to attain project's capacity of 115 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 115 MW of electricity, but it would be for onsite use only. This alternative assumes that rooftop development would occur primarily on commercial and industrial structures due to the greater availability of large, relatively flat roof areas necessary for efficient solar installations. Similar to the project, this alternative would be designed to operate year-round using PV panels to convert solar energy directly to electrical power. Power generated by such distributed solar PV systems would typically be consumed onsite by the commercial or industrial facility without requiring the construction of new electrical substation or transmission facilities.

**Table 6-1**, *Summary of Development Alternatives*, provides a summary of the relative impacts and feasibility of each alternative. A complete discussion of each alternative is also provided below.

Alternative	Description	Basis for Selection and Summary of Analysis
Project	Construction and operation of a solar facility on approximately 650 acres would generate up to 115 MW of electricity and store up to 80 MW of energy in a BESS. A 220 kV gen-tie would connect to the existing Pastoria Energy Facility (PEF) switchyard and/or at the onsite substation. The power would then be delivered via 220 kV circuits to a SCE grid at the Pastoria Substation. Approval of the GPA, CUP and Williamson Act Contract Cancellation for construction and operation of commercial solar electrical generating facilities would be required.	N/A

TABLE 6-1:SUMMARY OF DEVELOPMENT ALTERNATIVES

Alternative	Description	Basis for Selection and Summary of Analysis
Alternative 1: No Project Alternative	No development would occur on the project site. The project site would remain unchanged.	<ul> <li>Required by CEQA</li> <li>Avoids need for GPA, CUP, and Williamson Act Contract Cancellation</li> </ul>
		• Avoids all significant and unavoidable impacts
		• Greater impacts to greenhouse gas (GHG) emissions
		• Less impact in all remaining environmental issue areas
Alternative 2: Agricultural	Project site would be developed with active agricultural production as allowed under the	• Avoids need for GPA, CUP, and Williamson Act Contract Cancellation
Production	Kern County General Plan land use	• Similar impacts to biological resources.
Alternative	other existing applicable restrictions.	• Greater impacts to energy, greenhouse gases (GHG) emissions, hydrology and water quality, and utilities and service systems as it relates to water supply.
		• Less impacts in all remaining environmental issue areas
Alternative 3: Reduced Acreage Alternative	Construction and operation of solar facility on approximately 486 acres. This alternative is still expected to contain enough land to construct a solar array field capable of generating	• Similar impacts to hazards and hazardous materials, land use and planning, mineral resources, public services, and tribal cultural resources
	approximately 86 MW. The project site would require GPA, CUP, and Williamson Act Contract Cancellation approval.	• Greater overall impacts to GHG emissions
		• Less impact in all remaining environmental issue areas
Alternative 4: No Ground- Mounted Utility-Solar	The construction of 115 MW of PV solar distributed on rooftops throughout Southern San Joaquin Valley. Electricity generated would be for on-site use only.	• Avoids need for GPA, CUP, and Williamson Act Contract Cancellation at the project site but may require other entitlements (such as a CUP or variance) on other sites
Development Alternative – Distributed		• Avoid significant and unavoidable impacts associated with aesthetics, air quality, and biological resources
and Industrial Roofton Solar		• Reduces significant and unavoidable cumulative impacts associated with wildfires
Only		• Greater impacts to GHG emissions and land use and planning
		• Similar impacts to energy and tribal cultural resources
		• Less impact in all remaining issue areas

 TABLE 6-1:
 SUMMARY OF DEVELOPMENT ALTERNATIVES
# 6.5 Alternatives Considered and Rejected

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

- Wind Energy Project Alternative
- Industrial Power Plant Alternative
- Alternative Site Alternative

# 6.5.1 Wind Energy Project Alternative

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

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

In addition, energy production from wind power would not require the significant water usage associated with coal, nuclear, and combined-cycle sources. Turbines used in wind farms for commercial production of electric power are usually three-bladed units that are pointed into the wind by computer-controlled motors. The wind farm would consist of a group of wind turbines placed where electrical power is produced. The individual turbines would be interconnected with a medium-voltage power collection system and a communications network. At a substation, the medium-voltage electrical current would be increased through a transformer before connection to the high-voltage transmission system. Compared with traditional energy sources, the environmental effects of wind power are relatively minor. However, wind farms would not decrease short-term construction-related air emissions. Wind turbines would also have the potential to affect avian species in the local area. In addition, in order for wind turbines to produce an equivalent 115 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.

# 6.5.2 Industrial Power Plant Alternative

This alternative would involve the development of a natural gas-fired power plant or plants (equivalent to 115 MW) in Kern County. Fossil fuel-powered plants are designed on a large scale for continuous operation. However, byproducts of industrial power plant operation need to be considered in both design and operation. When waste heat that results from the finite efficiency of the power cycle is not recovered and used as steam or hot water, it must be released to the atmosphere, and often uses a cooling tower as a cooling medium (especially for condensing steam). The flue gas from combustion of the fossil fuels is discharged to the air and contains carbon dioxide and water vapor as well as other substances, such as nitrogen, nitrogen oxides, and sulfur oxides. Furthermore, unlike the project, fossil fuel-powered plants are major emitters of GHGs. In addition, industrial power plants generally involve the construction of large structures, such as cooling towers and gas stacks, as well as a large number of employees to operate the facility on a 24/7 basis 365 days a year. Accordingly, the development of an industrial power plant would typically result in greater adverse impacts related to: (1) aesthetics and the local visual setting of the project area; (2) air quality and GHG emissions; (3) land use and planning conflicts with the rural development of the surrounding area; (4) noise from the plant operations; (5) traffic from increased employment at the facility; and (6) demand on public utilities, including water and waste disposal.

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

- It would result in additional/greater impacts than the project (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 emission reduction objectives as this alternative would use non-renewable energy to produce electricity.

# 6.5.3 Alternative Site

This alternative would involve the development of the project on another site located within Kern County, other than constructing rooftop distributed generation systems. Although undetermined at this time, the alternative project site would likely be located in Southern San Joaquin Valley, similar to the project. This alternative is assumed to involve construction of a 115 MW PV solar facility with the ability to store up to 80 MW in a BESS on a site totaling 650 acres. *CEQA Guidelines* 15126.6(f)(2(a) states that the key and initial step in considering an alternative site is whether "any of the significant effects of the project would be avoided or substantially lessened" in relocating the project, while remaining consistent with the same basic objectives of the project.

Southern San Joaquin 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 Southern San Joaquin 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, and biological resources. This is based on the known general conditions in the area and the magnitude of the project.

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

# 6.6 Analysis Format

In accordance with *CEQA Guidelines* Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less, similar, or greater than the corresponding impacts of the project. Furthermore, each alternative is evaluated to determine whether the project objectives identified in Chapter 3, *Project Description*, of this EIR, would be mostly attained by the alternative. The project's impacts that form the basis of comparison in the alternatives analysis are those impacts which represent a conservative assessment of project impacts. The evaluation of each of the alternatives follows the process described below.

- a) The net environmental impacts of the alternative after implementation of reasonable mitigation measures are determined for each environmental issue area analyzed in this EIR.
- b) Post-mitigation significant and less than significant environmental impacts of the alternative and the project are compared for each environmental issue area as follows:
  - Less: Where the impact of the alternative after feasible mitigation would be clearly less adverse than the impact of the project, the comparative impact is said to be "less."
  - Greater: Where the impact of the alternative after feasible mitigation would be clearly more adverse than the impact of the project, the comparative impact is said to be "greater."
  - Similar: Where the impacts of the alternative after feasible mitigation and the project would be roughly equivalent, the comparative impact is said to be "similar."

c) The comparative analysis of the impacts is followed by a general discussion of whether the underlying purpose for the project, as well as the project's basic objectives would be substantially attained by the alternative.

**Table 6-2**, *Comparison of Alternatives*, provides a summary and side-by-side comparison of the project with the impacts of each of the alternatives analyzed. Please note that in Alternatives 1 through 4 in Table 6-2, the references to "less, similar, or greater," refer to the impact of the alternative compared to the project, and the impacts "no impact (NI), less than significant (LTS), or significant and unavoidable (SU)," in the parentheses refer to the significance conclusion of the specific alternative.

#### TABLE 6-2: COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: Agricultural Production Alternative	Alternative 3: Reduced Acreage Alternative	Alternative 4: No Ground-Mounted Utility- Solar Alternative – Distributed Commercial and Industrial Rooftop Solar Only
Aesthetics	Significant and unavoidable (project and cumulative)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Agriculture and Forestry Resources	Significant and unavoidable (project and cumulative)	Less (NI)	Less (NI)	Less (SU)	Less (NI)
Air Quality	Significant and unavoidable – construction (project and cumulative) Less than significant with mitigation - operational (project and cumulative)	Less (NI)	Similar (SU)	Less (SU)	Less (LTS)
Biological Resources	Less than significant with mitigation (project) Significant and unavoidable (cumulative only)	Less (NI)	Less (LTS)	Less (SU)	Less (LTS)
Cultural Resources	Less than significant with mitigation	Less (NI)	Less (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)	Less (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)	Less (LTS)	Similar (LTS)	Less (LTS)
Hydrology and Water Quality	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Land Use and Planning	Less than significant with mitigation	Less (NI)	Less (NI)	Similar (LTS)	Greater (LTS)
Mineral Resources	Less than significant	Less (NI)	Similar (LTS)	Similar (LTS)	Less (NI)
Noise	Less than significant	Less (NI)	Less (LTS)	Less (LTS)	Less (LTS)
Public Services	Less than significant with mitigation	Less (NI)	Greater (LTS)	Similar (LTS)	Less (LTS)
Transportation	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)

#### TABLE 6-2:COMPARISON OF ALTERNATIVES

Environmental Resource	Project	Alternative 1: No Project Alternative	Alternative 2: Agricultural Production 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	Similar (NI)	Less (LTS)	Similar (LTS)	Similar (LTS)
Utilities and Service Systems	Less than significant with mitigation	Less (NI)	Greater (LTS)	Less (LTS)	Less (LTS)
Wildfires	Significant and unavoidable (cumulative only)	Less (NI)	Less (LTS)	Less (SU)	Less (SU)
Meet Project Objectives?	All	None	None	Partially	Partially
Reduce Significant and Unavoidable Impacts?	N/A	All	Most	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 open space and grazing land and no change to the scenic vistas or existing visual character and quality 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 impacts to aesthetics compared to the project.

# Agriculture 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 largely undeveloped open space and grazing land. As such, the No Project Alternative would not involve changes to the existing environment which could result in the conversion of Farmland to non-agricultural. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to agriculture and forestry resources compared to the project.

# Air Quality

Under the No Project Alternative, the project site would remain undeveloped and there would be no construction activities or operational activities that would generate air emissions. No exceedance of the SJVAPCD's regional and localized significance thresholds would occur, no confliction with the attainment of the standard, nor would the No Project Alternative contribute to a cumulative net increase of criteria pollutant in the projects' region. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to air quality compared to the project.

# **Biological Resources**

Under the No Project Alternative, the project site would remain undeveloped and existing biological resources on the project site, including special-status plant and wildlife species would remain undisturbed since no construction or operation would occur. The project site would remain in its current state, as undeveloped open space and grazing land, which predominately includes wild oats grassland vegetation, and would not contribute to a cumulative loss of wildlife species, including burrowing owls, other raptors, San Joaquin kit fox, and migratory birds known to occur or with potential to occur on the project site. As such, the No Project Alternative would not have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species, on any riparian habitat or other sensitive natural communities, on federally protected wetlands; interfere substantially with the movement of any native resident or migratory fish or wildlife species; conflict with any local policies or ordinances protecting biological

resources; or conflict the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to biological resources compared to the project.

#### **Cultural Resources**

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. As such, disturbance to potential historical resources, archeological resources, or human remains located onsite would not occur. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to cultural resources compared to the project.

#### Energy

Under the No Project Alternative, the project site would remain undeveloped and no energy consumption activities would occur. As such, the No Project Alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. However, it should be noted that the No Project Alternative would not support the goals of California's RPS. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to energy compared to the project.

### **Geology and Soils**

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. As such, the No Project Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, and landslides; result in substantial soil erosion or loss of topsoil; result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse; be located on expansive soil; soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to geology and soils compared to the project.

#### **Greenhouse Gas Emissions**

Under the No Project Alternative, emissions associated with construction and operation of a solar energy facility and a BESS 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 GHGs. However, the potential offset of GHG emissions resulting from operation of the solar power generating facility would not be realized. Therefore, impacts would be less than significant under this alternative as it relates to generating GHG emissions and the No Project Alternative would result in greater impacts related to GHG emissions compared to the project.

#### Hazards and Hazardous Materials

Under the No Project Alternative, the project site would remain undeveloped, and no construction or operational activities would occur. The project site would remain in its current condition. As such, this alternative would not involve the routine transport, use, or disposal of hazardous materials associated with the project site; create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; emit hazardous waste within 0.25 miles of a school; be located on a site that is included on a list of hazardous materials sites; result in a safety hazard or excessive noise; impair implementation of an adopted emergency response plan; expose people or structures to significant risk of loss, injury, or death involving wildland fires; or generator vectors. Therefore, there would no impact and the No Project Alternative would result in less impacts related to hazardous materials compared to the project.

#### Hydrology and Water Quality

Under the No Project Alternative, the project site's existing hydrology and water quality would remain unchanged as no development or ground disturbance would occur on the project site. As such, this alternative would not violate water quality standards or waste discharge requirements; substantially decrease groundwater supplies; substantially alter the existing drainage patterns of the site or area in a manner that would result in substantial erosion and/or sedimentation onsite or offsite, result in flooding onsite or offsite; create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage system, or impede or redirect flood flows; result in flood hazards, tsunami, or seiche zones; or conflict or obstruct implementation of a water quality plan. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to hydrology and water quality compared to the project.

#### Land Use and Planning

The No Project Alternative would not develop any new uses at the project site, and, consequently would not require a zone change or CUP. As such, the No Project Alternative would not cause a significant environmental impact due to physically dividing an established community or conflicting 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 impacts related to land use and planning compared to the project.

#### **Mineral Resources**

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbance would occur. While there are oil and gas wells located on the project site, these oil and gas wells have been plugged and were classified by California Geologic Energy Management Division (CalGEM) [formerly the California Division of Oil, Gas, and Geothermal Resources (DOGGR)], as dry hole wells, which are defined as wells that have not encountered hydrocarbons in economically producible quantities. As such, the No Project Alternative would not result in the loss of availability of a known mineral resource or 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 impacts related to mineral resources compared to the project.

#### Noise

Under the No Project Alternative, the project site would remain undeveloped. Noise sources from construction and operation would not be present onsite, and existing noise conditions would remain the same. As such, the No Project Alternative would not result in generation of a substantial temporary or permanent increase in ambient noise levels; generate excessive ground-borne vibration; or expose people residing or working in the project area to excessive noise levels. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to noise compared to the project.

### **Public Services**

Under the No Project Alternative, the project site would remain undeveloped and no new demand for fire or law enforcement protection services would occur. As such, the No Project Alternative would not result in the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and law enforcement protection. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to public services compared to the project.

# Transportation

Under the No Project Alternative, the solar facilities would not be constructed and this alternative would not introduce construction and operational-related trips. Existing traffic patterns and volumes on nearby roadways would remain unchanged. As such, the No Project Alternative would not conflict with a program, plan, ordinance or policy addressing the circulation system, nor would the No Project Alternative conflict or be inconsistent with *CEQA Guidelines* Section 15064.3(b). In addition, the No Project Alternative would not substantially increase hazards due to a geometric design feature or result in inadequate emergency access. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to transportation compared to the project.

# Tribal Cultural Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground disturbing activities would occur. According to record searches and tribal resource consultations, no tribal resources are present on the project site. As such, the No Project Alternative would not cause a substantial adverse change in the significant of a tribal cultural resources with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k) or as a resource determined by the lead agency. Therefore, there would be no impact and the No Project Alternative would result in similar impacts related to tribal cultural resource compared to the project.

# **Utilities and Service Systems**

Under the No Project Alternative, the solar facilities would not be constructed and there would be no new demand for utilities and service systems on the project site. As such, the No Project Alternative would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects; generate solid waste in excess of state or local standards; or conflict with federal, State, and local management and reduction statues and regulations

related to solid waste. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to utilities and service systems compared to the project.

### Wildfire

Under the No Project Alternative, the solar facilities would not be constructed. As such, the No Project Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan; expose occupants to pollutant concentrations from a wildfire; require the installation or maintenance of associated infrastructure; or expose people or structures to significant risks. Therefore, there would be no impact and the No Project Alternative would result in less impacts related to wildfire compared to the project.

# **Comparison of Impacts**

The No Project Alternative would avoid the significant and unavoidable impacts associated with development of the project. This alternative would result in similar impacts related to tribal cultural resources. This alternative would result in less impacts to all remaining environmental issue areas with the exception of GHG emissions; since this alternative would not offset GHGs through the operation of a solar energy facility, impacts to GHG emissions would be greater under this alternative.

# **Relationship to Project Objectives**

The No Project Alternative would not achieve any of the project objectives listed above in Section 6.2, *Project Objectives*, including assisting California in meeting its GHG emissions reduction goals and supporting California's RPS Program. 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: Agricultural Production Alternative

# **Environmental Impact Analysis**

# Aesthetics

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

Under this alternative, there would be no zone change, thereby retaining the total amount of agricultural land in Kern County. Development of the project site with new agricultural uses would be visually similar to the types of uses in the project area and would not introduce new sources of light; thus, potential impacts to scenic vistas, scenic resource, visual character and quality, and daytime and nighttime views would be reduced. As such, significant and unavoidable impacts related to visual character and quality would be eliminated under this alternative. In addition, as agricultural uses would be similar to those in the surrounding area, this alternative would not combine with cumulative projects to create a significant unavoidable cumulative impact related to visual character and quality. Therefore, impacts would be less than significant under the Agricultural Production Alternative and this alternative would result in less aesthetics impacts compared to the project.

#### Agriculture and Forestry Resources

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site. Under this alternative, there would be no zone change, thereby increasing the total amount of agricultural land in Kern County. As noted in Section 4.2, *Agricultural Resources*, there is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project site nor is the project site zoned for forest land. In addition, as the project site is under a Williamson Act Contract, the agricultural development under this alternative would not conflict with the existing Williamson Act Contract and no cancellation of a Williamson Act Contract would be required. As such, project-level and cumulative impacts related to the cancelation of a Williamson Act Contract would be eliminated under this alternative. As it relates to other changes in the existing environment that could result in the conversion of Farmland or forestry land to nonagricultural or non-forest use, as the Agricultural Production Alternative would not involve other changes in the existing environment. Therefore, no impacts would occur under the Agricultural Production Alternative and this alternative would result in less agriculture and forestry resources impacts compared to the project.

### Air Quality

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

Similar to the project, the Agricultural Production Alternative would result in short-term emissions from the use of heavy construction equipment. The conversion of the project site to agricultural uses would require similar heavy equipment to the project including equipment used for preparing the land for farming (e.g., tracker/loader/backhoes/tiller, etc.). However, the conversion of agricultural uses would not require haul truck trips to the same extent at the project as solar panels would not need to be hauled to the project site. All stationary and portable compression-ignited diesel-fueled agricultural equipment used under the Agricultural Production Alternative would be required to comply with CARB's Airborne Toxics Control Measure, which restricts emission limits and would in turn reduce transportation fuel usage. This alternative would also adhere to all SJVAPCD rules and regulations applicable to agricultural activities, which would serve to reduce emissions from initial implementation; however, they would be less restrictive than the measures provided in Mitigation Measures MM 4.3-1 through MM 4.3-9. As similar heavy equipment on a daily basis would be required under this alternative as with the project, impacts would be less than significant for project-level impacts. While temporary impacts during initial implementation would be less than significant at the project level, consistent with the project they would be significant and unavoidable at the cumulative level because it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health impacts mentioned. Thus, emissions from this alternative and related projects would cumulatively combine to result in a significant and unavoidable impact.

Ongoing emissions associated with the proposed agricultural uses under the Agricultural Production Alternative would be greater due to routine emissions associated with agricultural vehicles, and the seasonal

tilling of land for agricultural uses, etc. Given this increase, this alternative would result in greater ongoing air quality impacts in the air basin compared to the project.

As determined above, cumulative impacts from initial implementation would be significant and unavoidable because the County does not have jurisdiction and control over all potential projects in the San Joaquin Valley Air Basin. As cumulative impacts from initial implementation would be significant and unavoidable, the Agricultural Production Alternative would also obstruct the air quality planning goals set forth by SJVAPCD. Therefore, similar to the project, cumulative air quality impacts during initial implementation would be significant and unavoidable.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations. The alternative's potential to expose sensitive receptors to substantial pollutant concentrations associated with visibility impacts would be similar to that of the project and would be less than significant with adherence to SJVAPCD Rule 4101, which does not allow discharge into the atmosphere for any single source of emission. In addition, during initial implementation of this alternative, it is possible that onsite workers could be exposed to Valley Fever as fugitive dust is generated during initial implementation. However, this alternative would implement dust-minimizing techniques as required to be implemented through SJVAPCD Regulation VIII and required Conservation Management Practice Plans, these measures would be similar to measures provided in Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-6. However, due to the open nature of the project site, blowing dust could occur and result in the dispersal of criteria air pollutants such as PM2.5 and contribute to the transmission of respiratory diseases like COVID-19. Based on the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM<sub>2.5</sub> along with indirect linkages of criteria pollutants and COVID-19, on vulnerable populations, development of the Agricultural Production Alternative would result in significant and unavoidable project level impacts, similar to the Project. While ongoing emissions were determined to be greater under this alternatives, as discussed above, impacts related to toxic air contaminants and localized pollutants concentrations would be less than significant as the increase in emissions not anticipated to exceed these thresholds.

Overall, project and cumulative impacts under the Agricultural Production Alternative would be significant and unavoidable and would result in similar air quality impacts compared to the project.

# **Biological Resources**

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

Conversion of the undeveloped site to agricultural uses would affect biological resources on the project site as this alternative would replace the predominately wild oats grassland existing vegetation on the project site, with agricultural crops on the entire 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. The increased human presence would deter wildlife from nesting, foraging, or being on the project site.

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), similar to the project, the Agricultural Production Alternative would have an impact on California jewelflower, Lemmon's jewelflower, Tejon poppy, Bakersfield cactus, Blunt-nosed leopard lizard, burrowing owl, San Joaquin kit fox, and migratory birds. To convert portions of the project site to agricultural uses, this alternative would involve ground disturbance throughout the project site. As this

alternative would not require any permits, this alternative would not implement Mitigation Measures MM 4.4-1 through MM 4.4-9; however, the take of candidate, sensitive, or a special-status species is prohibited by law and Alterative 2 would adhere to regulations protecting candidate, sensitive, or a special-status species. In addition, as the Agricultural Production Alternative would not install any solar uses, Mitigation Measure MM 4.4-10 would not be implemented.

With regard to impacts on any riparian habitat or other sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS, while two ephemeral drainages were identified along the gen-tie portion of the project site, this alternative would not include the construction of a gen-tie line and would not allow any agricultural uses near these drainages. Thus, no impacts to riparian habitat or other sensitive natural community, or jurisdictional waters would occur. Impacts would be less than the less than significant impacts of the project.

As it relates to the movement of any resident or migratory fish or wildlife species, due to the nature of agricultural production uses, development of the Agricultural Production Alternative would not restrict the passage for the San Joaquin kit fox. This alternative would be less than significant.

Due to the nature of agricultural production uses, potential impacts to state or federally protected wetlands and consistency with local policies and ordinances protecting biological resources would be less than significant.

The Agricultural Production Alternative would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan, similar to the project.

Cumulative impacts under the project were determined to significant and unavoidable as projects that involve the installation of PV panels have the potential to cause impacts to migratory birds associated with collisions. However, as the Agricultural Production Alternative would not include the installation of any solar panels, cumulative impacts would be eliminated under this alternative.

Based on the above, impacts under the Agricultural Production Alternative were determined to result in less than significant impacts at the project-level and cumulative level as it relates to impacts to candidate, sensitive, or special-status species, the movement of any resident fish or wildlife species, state or federally protected wetlands, or consistency with local policies and ordinances protecting biological resources due to existing laws in place and due to the nature of the agricultural production uses. Therefore, the Agricultural Production Alternative would result in less impacts related to biological resources compared to the project.

# **Cultural Resources**

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

To convert the project site to agricultural uses, such as farming, this alternative would require surface level ground disturbance throughout the project site. No historical or archaeological resources were identified during site surveys and literature reviews. Under the Agricultural Production Alternative, ground disturbance within the project site would be shallow and would be unlikely to result in a potentially significant impact to historical or archaeological resources. As this alternative would not require the implementation of mitigation measures, such as Mitigation Measures MM 4.5-1 through MM 4.5-4, the Agricultural Production Alternative

would adhere to all applicable federal, state, and local regulations governing cultural resources, including California Penal Code, Section 622.5. Therefore, impacts to historical or archaeological resources under the Agricultural Production Alternative would be less than significant.

There is no indication that any particular location within the project site has been used for purposes of human burial in the recent or distant past. However, in the unlikely event that human remains are inadvertently discovered during project initial implementation activities, this alternative would comply with Health and Safety Code, Section 7050.5, which includes requirements similar to Mitigation Measure MM 4.5-5, and would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, the Agricultural Production Alternative would result in less cultural resource impacts compared to the project as this alternative would result in less ground disturbance than required for the proposed project.

### Energy

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

The project site would be developed with agricultural uses and would require similar heavy duty equipment initial implementation including equipment used during for grading (e.g., graders. tracker/loader/backhoes/tiller, etc.); however, haul truck trips would be less than the project under this alternative. During ongoing processes, transportation-related energy (petroleum-based fuels) use would be greater under this alternative than under the project due to continuous heavy equipment operation and energy use related to irrigation water pumping. Overall, the agricultural uses under this alternative would require similar energy consumption.

All stationary and portable compression-ignited diesel-fueled agricultural equipment used under the Agricultural Production Alternative would be required to comply with CARB's Airborne Toxics Control Measure, which restricts emission limits and would in turn reduce transportation fuel usage. In addition, the fuel efficiency of the vehicles being used by the employees and visitors under this alternative during ongoing processes is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during ongoing processes would decrease over time. Given the CARB restriction in vehicle idling and the increase in vehicle efficiency, impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources during both initial implementation and ongoing processes would be less than significant under this alternative. Furthermore, similar to the project, the Agricultural Production 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 Agricultural Production Alternative related to energy use would be less than significant, but greater than those of the project as the project site would not generate renewable energy, and would therefore, not assist the state in meeting its renewable energy generation goals to the fullest extent as compared to the project.

# **Geology and Soils**

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

Initial implementation of the Agricultural Production Alternative would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the California Building Code (CBC) 2019 Edition (CCR Title 24). Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with this alternative. The Agricultural Production Alternative would not require implementation of Mitigation Measures MM 4.7-1 and MM 4.7-2 as no structures are proposed to be developed under the alternative. Furthermore, the Agricultural Production Alternative would adhere to requirements of the National Pollutant Discharge Elimination System (NPDES), which includes requirements similar to Mitigation Measure MM 4.7-3 and would comply with Kern County Grading Code (Section 17.28.070), which includes requirements similar to Mitigation Measure MM 4.7-4 in order to address potential soil erosion and loss of top soil. Additionally, no septic tanks are proposed under this alternative. As it relates to unique paleontological resource or site or unique geologic feature, under the Agricultural Production Alternative any ground disturbance within the project site would be shallow and would be unlikely to result in a potentially significant impact to paleontological resources. As this alternative would not require any permits, the Agricultural Production Alternative would not implement Mitigation Measures MM 4.7-5 through MM 4.7-7. The Agricultural Production Alternative would adhere to all applicable federal, state, and local regulations governing paleontological resources, including Public Resources Code Section 5097.5 and Section 30244. Therefore, impacts to paleontological resources would be less than significant.

Based on the above, impacts to geology and soils would be less than significant and less under this alternative compared to the project as no structures are proposed under the Agricultural Production Alternative and ground disturbance required under this alternative would be shallow.

# Greenhouse Gas Emissions

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

As portions of the Agricultural Production Alternative would develop land uses that would emit GHG emissions throughout the life of the project (from increased water usage, traffic, and operation of agricultural equipment), this would result in a net gain of GHG emissions within California. Unlike the project, the Agricultural Production Alternative would not assist an offtaker<sup>1</sup> in reducing its GHG emissions as consistent with the California Global Warming Solutions Act. Therefore, although both this alternative and the project would result in less-than-significant GHG emissions impacts, impacts from the Agricultural Production Alternative would be greater when compared to the project since the beneficial reduction in GHG emissions would not occur.

<sup>&</sup>lt;sup>1</sup> An "offtaker" is a purchaser of renewable energy in a solar power purchase agreement.

#### Hazards and Hazardous Materials

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS 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 initial implementation of the agricultural uses. Agricultural uses on the project site could require the use of hazardous materials during ongoing processes including herbicides and pesticides. However, as with the project, standard Best Management Practices (BMPs) would ensure that exposure to potentially hazardous materials used or found onsite would be reduced or minimized. As the alternative would not include handling of any equipment that would be required for installation of a solar project or result in the generation of construction debris, the Agricultural Production Alternative would not implement Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, and MM 4.17-1. In addition, the Agricultural Production Alternative would be required to use herbicides and pesticides that are approved by the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service for use in California, similar to the requirements under Mitigation Measure MM 4.9-4. Therefore, impacts from significant hazards to the public or environment through the routine transport, use, or disposal of hazardous materials and through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

As project site is not within 0.25 miles of an existing or proposed school, is not included on a list of hazardous materials sites, nor is the project site within the Kern County Airport Land Use Plan, the Agricultural Production Alternative would have less than significant impacts, similar to the project.

Similar to the project, the Agricultural Production Alternative is not anticipated to physically interfere with emergency vehicle access or personnel evacuation from the site during initial implementation or ongoing processes of this alternative. Implementation of Mitigation Measures MM 4.15-1 and MM 4.9-4 would not be required.

As it relates to wildland fires, the project site is not located within a high fire hazard severity zone. In addition, the Agricultural Production Alternative includes the development of agricultural uses, which would not increase the potential for wildfires from occurring on the project site. Therefore, this alternative would not implement Mitigation Measure MM 4.14-1.

Impacts under the Agricultural Production Alternative and the project would result in less-than-significant impacts and the potential impacts from hazards and hazardous materials would be less compared to the project.

#### Hydrology and Water Quality

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

The conversion of the project site to agricultural uses would not likely increase impervious surfaces. While conversion of the project site to agricultural uses would likely result in intensive ground disturbance, the erosion potential would be similar under this alternative as with the project. However, operation of the agricultural uses proposed under this alternative would likely involve continued ground disturbance from activities such as plowing, whereas the project's operation would not; thereby, posing a greater potential

impact to water quality. Operation of agricultural uses could also affect groundwater quality through the application of pesticides or herbicides.

Similar to the project, the Agricultural Production Alternative would include implementation of BMPs during initial implementation and ongoing processes to prevent the occurrence of soil erosion and discharge and would adhere to the applicable requirements required under the NPDES, which includes requirements similar to Mitigation Measure MM 4.7-3. As the alternative would not include handling of any equipment that would be required for installation of a solar project, the Agricultural Production Alternative would not implement Mitigation Measure MM 4.9-1. During ongoing processes of this alternative, agricultural uses would be developed and little to no impervious surfaces would be on the project site; as such, the Agricultural Production Alternative would not require implementation of Mitigation Measure MM 4.10-1.

As it relates to groundwater supplies, during initial implementation and ongoing processes water use would be greater under this alternative as compared to the project, as agricultural uses are more water intensive uses than the construction and operation of solar panels. Similar to the project, water demands would be met through existing water distribution lines that are located along the perimeter of the project site. Agreements for this alternative would need to be made with the Tejon-Castac Water District (TCWD) to account for the increase in acre-feet of water per year that would be required during initial implementation and ongoing processes of the Agricultural Production Alternative. It is assumed that water demand under the Agricultural Production Alternative would also be sufficiently supplied by the existing turnouts on the project site. Therefore, similar to the project, this alternative would not substantially deplete ground water supplies or interfere substantially with groundwater recharge; however, water use would be greater than under the project.

With regard to existing drainage patterns, installation of the agricultural uses under the Agricultural Production 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. The Agricultural Production Alternative would adhere to requirements of the NPDES, which includes requirements similar to Mitigation Measure MM 4.7-3. In addition, as agricultural uses would be developed, little to no impervious surfaces would be on the project site, the Agricultural Production Alternative would not require implementation of Mitigation Measure MM 4.10-1.

As it relates to flood hazard, tsunami, or seiche zone, 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.

This alternative would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan as the Agricultural Production Alternative would require BMPs and drainage control requirements that would be consistent with the Basin Plan.

Overall, although both the project and this alternative would result in less-than-significant impacts, the Agricultural Production Alternative would result in greater impacts to hydrology and water quality compared with the project as ongoing processes of the agricultural uses as proposed under this alternative would likely involve the application of pesticides or herbicides from the proposed agricultural uses.

#### Land Use and Planning

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

Unlike the project, the Agricultural Production Alternative would not conflict with the existing land use at the project site, because the site would be developed with the current General Plan land use and zoning designations. This alternative would be consistent with current zoning as well as existing land use plans, policies, and regulations and no GPAs or CUPs would be required, as under the project. Implementation of Mitigation Measure MM 4.11-1 would not be required. Therefore, there would be no impact and the Agricultural Production Alternative would result in less impacts related to land use and planning compared to the project.

#### Mineral Resources

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

While there are oil and gas wells located on the project site, these oil and gas wells have been plugged and are classified by CalGEM as dry hole wells, which are defined as wells that have not encountered hydrocarbons in economically producible quantities. As such, similar to the project, development of the Agricultural Production Alternative would not result in the loss of availability of a known mineral resource or locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, mineral resource impacts would be less than significant under this alternative and similar to the less-than-significant impacts identified for the project.

#### Noise

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

During initial implementation, impacts under this alternative would be similar to the impacts of the project, as the conversion of the project site to agricultural uses would require similar heavy equipment as required for the construction of the project including equipment used related to farming (e.g., tracker/loader/backhoes/tiller, etc.). However, the conversion of agricultural uses would not require haul truck trips to the same extent at the project as solar panels would not need to be hauled to the project site. During ongoing processes, with regard to the proposed agricultural uses, this alternative would generate greater noise compared to the project associated with the daily operation of agricultural equipment and worker vehicles.

Under this alternative, the number of onsite equipment used during initial implementation is assumed to be similar to the project and, thus, the Agricultural Production Alternative would not result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards; thus, impacts would be less than significant. Initial implementation of the Agricultural Production Alternative would not require any permits, this alternative would not require any permits, this alternative would not implement Mitigation Measures MM 4.13-1 through MM 4.13-3. However, given that initial

implementation activities would be a sufficient distance from structures, which are located over 2.5 miles from the project site, effects from vibrations generated during initial implementation are not anticipated to impact vibration sensitive receptors.

As with the project, ongoing processes under the Agricultural Production Alternative would not result in the generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards; thus, impacts would be less than significant. Ongoing processes of the Agricultural Production Alternative would involve worker truck trips and agricultural equipment use that would be a sufficient distance from structures (i.e., over 100 feet away from structures). As such, vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers.

Based on the above, both the project and this alternative would result in less-than-significant impacts and this alternative would result in less noise impacts compared to the project.

### **Public Services**

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

While initial implementation of the Agricultural Production Alternative would result in an increase number of workers on the project site, the Agricultural Production Alternative includes the development of agricultural uses, which would not increase the potential for fires from occurring on the project site during initial implementation. Therefore, this alternative would not implement Mitigation Measure MM 4.14-1. During ongoing processes, development of agricultural uses could result in a slight increase in long-term population compared to the project as agricultural uses would require more workers on the project site. However, this slight increase would not require the development of new or physically altered KCFD facilities. Impacts related to fire protection would be less than significant.

With regard to law enforcement protection, the project site is located in a relatively remote location. There would be limited initial implementation -related traffic for the development of agricultural uses under the Agricultural Production Alternative as haul truck trips would not be required for the transportation of solar panels, as required under the project. As such, this alternative would not have a significant adverse effect on the Kern County Sheriff's Office (KCSO) protective service provision or California Highway Patrol (CHP)'s ability to patrol the highways. During ongoing processes under this alternative, agricultural uses would increase traffic due to the increase employees travelling to the project site. However, the increase is not likely to have a significant adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts related to law enforcement protection would be less than significant.

Although both this alternative and the project would result in less-than-significant impacts, the Agricultural Production Alternative would result in greater impacts to public services compared to the project due to proposed agricultural uses, which results in an increase in population during ongoing processes as compared to the project.

# Transportation

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

With regard to the agricultural uses, there would be limited initial implementation -related traffic for the conversion of the project site to agricultural uses as haul truck trips would be reduced under this alternative. Once operational, the Agricultural Production Alternative would involve more routine vehicle trips associated with agricultural uses. Similar to the project, during initial implementation of the Agricultural Production Alternative of trips for the conversion of the project site to agricultural uses, it is anticipated that local traffic would not change from the existing LOS B or C operations with the addition of traffic generated from initial implementation under this alternative. While the Agricultural Production Alternative would increase the number employees travelling to the project site, the number of added vehicles to the roadway network would not have a discernable effect on roadway operations or levels of service. Impacts would be less than significant.

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 Agricultural Production Alternative, as with the project.

As it relates to increasing hazards due to a geometric design feature or incompatible use, as the Agricultural Production Alternative does not include the installation of solar panels on the project site, this alternative would not require the use of oversized vehicles during initial implementation, and, as such, would not create a hazard to the public. With regard to emergency access, as this alternative would not cause a significant increase in congestion or significance worsen the existing service levels at intersection roadways, the Agricultural Production Alternative would have a less-than significant impact on emergency access during initial implementation and ongoing processes.

Therefore, although both this alternative and the project would result in less-than-significant impacts, impacts to transportation from the Agricultural Production Alternative would be greater when compared to the project as agricultural uses would increase the amount of trips to the project site as compared to the project.

# Tribal Cultural Resources

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

According to record searches and tribal resource consultations, no tribal resources are present on the project site. However, a portion of the Sebastian Indian Reservation California Historic Landmark (P-15-007674/CHL 133), is located approximately 1 mile south of the project site. As any ground disturbance within the project site would be shallow under this alternative, development of the Agricultural Production Alternative would be unlikely to result in a potentially significant impact to historical or archaeological resources. Therefore, impacts to tribal cultural resources would be less than significant and impacts to tribal cultural Production Alternative would be less than those of the project.

#### **Utilities and Service Systems**

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

The proposed agricultural uses would not likely increase impervious surfaces, and, as such, would not increase surface runoff. However, water demand from the proposed agricultural uses would increase substantially in comparison to the project due to the consistent demand from agricultural uses. Additionally, the proposed agricultural uses under this alternative would produce solid waste associated with the employees during the ongoing processes, that would need to be disposed of at local landfills.

As with the project, conversion of the project site to agricultural uses would require water usage for dust suppression as well as minimal generation of wastewater, usage of electrical power, natural gas, and telecommunications. In addition, initial implementation of the Agricultural Production Alternative would not substantially alter stormwater drainage. Similar to the project, the Agricultural Production Alternative would adhere to requirements of the NPDES, which includes requirements similar to Mitigation Measure MM 4.7-3, and would include BMPs designed to prevent the occurrence of soil erosion and discharge of other initial implementation-related pollutants that could contaminate water quality. An increase in solid waste generation under the Agricultural Production Alternative as compared to the project is not anticipated.

With regard to ongoing processes, the agricultural uses would substantially increase water demand. Similar to the project, water demands would be met through existing water distribution lines that occur along the perimeter of the site. Agreements for this alternative would need to be made with the TCWD to account for the increase in acre-feet of water per year that would be required during initial site conversion and ongoing processes of the Agricultural Production Alternative. It is assumed that water demand under the Agricultural Production Alternative would also be sufficiently supplied by the existing turnouts on the project site. Wastewater and solid waste generation associated with this alternative would also slightly increase compared to the project due to the increase in the number of employees associated with the agricultural uses. As it relates to stormwater drainage, as agricultural uses would be developed, little to no impervious surfaces would be on the project site and the Agricultural Production Alternative would not require implementation of Mitigation Measure MM 4.10-1.

Although both the project and this alternative would result in less-than-significant impacts, the Agricultural Production Alternative would result in greater impacts to utilities and service systems compared to the project as this alternative would have an increased demand on the water supply and local landfills compared to the project due to the proposed agricultural uses.

#### Wildfire

Under the Agricultural Production Alternative, the project site would be developed for active agricultural production. Solar panels and a BESS would not be installed and solar energy would not be generated on the site.

Impacts related to wildfire for the proposed agricultural uses may introduce additional sources of vegetation, which may serve as fuel and exacerbate wildfire risks. Additionally, the use of the project site for agriculture would result in an increase of employees on the project site, which would further increase potential impacts from wildfire risks.

As with the project, this alternative is not classified as being within a high fire hazard severity zone and is not anticipated to physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site. The site is located in a rural, sparsely developed areas with limited population. The project site is not located along an identified emergency evacuation route and is not identified in any adopted emergency evacuation plan. Also in compliance with applicable Fire Code and Building Code requirements, construction managers and personnel during the initial implementation would be trained in fire prevention and emergency response. Therefore, the Agricultural Production Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The project site is designated as Local Responsible Areas (LRA) Unzoned, which are considered areas with low fire frequency. The potential for wildfire on the project site is not considered high. As the Agricultural Production Alternative includes the development of agricultural uses, development of agricultural uses would not increase the potential for wildfires from occurring on the project site. Therefore, this alternative would not implement Mitigation Measure MM 4.14-1. As such, impacts under this alternative related to exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would be less than significant.

With regard to the installation or maintenance of associated infrastructure, unlike the project, agricultural uses would not require any installation of associated infrastructure. As such, this alternative would reduce fire risk that may result in temporary or ongoing impacts to the environment.

Similar to the project, development of the agricultural uses on the Agricultural Production Alternative could alter the existing drainage patterns and flowpaths compared to existing conditions. This alternative, similar to the project, would require implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include erosion and sediment control BMPs during initial implementation, thereby reducing the potential of erosion and siltation during initial implementation and would control potential flooding events that could occur during initial implementation. During ongoing processes of this alternative, agricultural uses would be developed and little to no impervious surfaces would be on the project site; as such, the Agricultural Production Alternative would not require implementation of Mitigation Measure MM 4.10-1. As such, similar to the project, the Agricultural Production Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Based on the above, impacts would remain less than significant under this alternative as it relates to wildfire impacts. In addition, as development of agricultural uses would not increase the potential for wildfires from occurring on the project site the significant and unavoidable cumulative impacts related to wildfire would be eliminated under this alternative. Impacts under the Agricultural Production Alternative would be less as compared to the project.

# **Comparison of Impacts**

The Agricultural Production Alternative would result in greater impact to energy, GHG emissions, hydrology and water quality, public services, transportation, and utilities and services systems as it relates to water supply. The alternative would result in similar impacts to air quality and mineral resources. This alternative would result in less impacts in all remaining environmental issue areas. This alternative would result in greater energy impacts as this alternative would not assist the state in meeting its renewable energy generation goals to the fullest extent as compared to the project. This alternative would result in greater GHG emissions from operation of the solar power generating facility, compared with traditional gas- or coalfired power plants, would not be realized. Greater impacts to hydrology and water quality would result from continued ground disturbance from activities such as plowing and the application of pesticides or herbicides from the proposed agricultural uses. The increase in human population onsite during ongoing processes is also responsible for greater impacts to public services, transportation, and utilities and service systems. This alternative would eliminate the significant and unavoidable impacts associated with aesthetics (project and

cumulative), agriculture and forestry resources (project and cumulative), biological resources (cumulative only), and wildfire (cumulative only), however, this alternative would not eliminate significant and unavoidable air quality impacts (project and cumulative).

# **Relationship to Project Objectives**

The Agricultural Production Alternative would not achieve any of the project objectives listed above in Section 6.2, including the project objective related to assisting California in meeting its GHG emissions reduction goals and supporting California's RPS Program.

# 6.7.3 Alternative 3: Reduced Acreage Alternative

# **Environmental Impact Analysis**

# Aesthetics

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

With regard to impacts related to scenic vistas, there are no officially designated scenic vistas within the vicinity of the project site. However, the viewshed of the Tehachapi and San Emigdio Mountains experienced by persons traveling south on I-5 in passenger vehicles could be considered a scenic vista. While the placement of solar cells, the gen-tie transmission line, and the associated facilities on the site, including the interconnection facilities, would alter the views under the Reduced Acreage Alternative, similar to the project, altered views would be limited due to the level terrain and the limited height of the panels. The gen-tie transmission line poles would be similar in size to existing nearby utility poles. As such, impacts would be less than significant.

Similar to the project, the Reduced Acreage Alternative is located approximately 50 miles west of any Eligible State Scenic Highways and is separated from these highways by the Tehachapi Mountains. Given this distance and intervening topography, the Reduced Acreage Alternative project would not be visible from any Officially Designated or Eligible State Scenic Highway.

While this alternative would avoid development on a portion of the project site (i.e., the southwestern parcel), this alternative does include the installation of solar panels, BESS, and associated infrastructure. Similar to the project, the Reduced Acreage Alternative would similarly implement Mitigation Measures MM 4.1-1 through MM 4.1-3, which 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. In addition, the color treatment of the BESS structure under this alternative would help these components to better blend in with the natural landscape. However, similar to the project, because there are no feasible mitigation measures that can be implemented to maintain the existing open and undeveloped grassland landscape character of the project site, impacts to visual resources would remain significant and unavoidable. Cumulative impacts under the Reduced Acreage Alternative would be significant and unavoidable as related projects coupled with development of the Reduced Acreage Alternative would convert land in a presently rural area to a degree that cannot be mitigated, similar to the project.

As the Reduced Acreage Alternative includes the development of solar plans, as with the project, the potential for the solar panels to result in light and glare impacts would be similar to the project during construction and operation of the Reduced Acreage Alternative. As such, this alternative would implement Mitigation Measures MM 4.1-4 through MM 4.1-6, which include demonstrating consistency with the applicable provisions of the *Dark Skies Ordinance* (Chapter 19.81 of the Kern County Zoning Ordinance, demonstrating that solar panels and hardware are designed to minimize glare, and demonstrating that onsite building utilized non-reflective materials. Impacts related to light and glare under the Reduced Acreage Alternative site would be less than significant.

The Reduced Acreage Alternative would have less overall impacts to aesthetics compared to the project due to the reduction in project site size under this alternative; however, impacts would remain significant and unavoidable.

# Agriculture and Forestry Resources

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

The project and the Reduced Acreage Alternative would be developed with a solar panels facility and associated infrastructure and, thus, would create changes in the existing environment and would convert land zoned for agriculture to non-agricultural use. Similar to the project, the project would not directly or indirectly impact farmland or forest land, as there is no designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project area nor is the site zoned for forest land. While the northwestern and eastern parcels where the Reduced Acreage Alternative would be developed are under a Williamson Act Contract, as with the project, the project proponent would petition for cancellation of the Williamson Act Contract in the public interest. With payment of the cancellation fee, as required by the Government Code, the Williamson Act Contract cancellation process would be complete and impacts associated with Williamson Act lands would be similar to the project and thus would be less than significant. As it relates to other changes in the existing environment that could result in the conversion of Farmland or forestry land to nonagricultural or non-forest use, as with the project, although the Reduced Acreage Alternative may cause changes to the existing environment, there is no evidence that the project would affect agricultural land in the vicinity during operational activities. In addition, with implementation of Mitigation Measures MM 4.9-1 and MM 4.9-3, any

Similar to the Project, as implementation of this alternative would require cancellation of a Williamson Act Contract, which is in non-renewal status and set to expire February 28, 2023, impacts related to the cancellation of an open space contract would be significant and unavoidable and would not be eliminated under this alternative. As the Reduced Acreage Alternative would include a smaller footprint, the Reduced Acreage Alternative would result in less impacts to agriculture and forestry resources compared to the project.

# Air Quality

The use of construction vehicles, heavy equipment operation, and worker carpool trips would be similar compared to the project, but grading and other construction activities would not occur on the southwestern parcel. Similar to the project, this alternative would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes and would also require implementation of Mitigation Measures MM 4.3-1 through MM 4.3-9 in order to reduce the severity of construction-related emissions. As similar heavy equipment on a daily basis would be required under this alternate as with the project, impacts would be less than significant with mitigation for project-level construction impacts. However, impacts related to cumulative construction emissions would be significant and unavoidable because it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health impacts mentioned. Operational emissions would likely be reduced under this alternative as fewer maintenance trips would be required with the reduced project scale. As such, operational impacts would be less than significant.

As determined above, cumulative construction impacts would be significant and unavoidable because the County does not have jurisdiction and control over all potential projects in the San Joaquin Valley Air Basin. As cumulative construction impacts would be significant and unavoidable, the Reduced Acreage Alternative would also obstruct the air quality planning goals set forth by SJVAPCD. Therefore, similar to the project, impacts would be significant and unavoidable.

Implementation of this alternative would expose sensitive receptors to substantial pollutant concentrations. The alternative's potential to expose sensitive receptors to substantial pollutant concentrations associated with visibility impacts would be similar to that of the project and would be less than significant with implementation of Mitigation Measures MM 4.3-1 and MM 4.3-2. In addition, during construction of this alternative, it is possible that onsite workers could be exposed to Valley Fever as fugitive dust is generated during construction. However, this alternative would implement dust-minimizing techniques as required under Mitigation Measures MM 4.3-1, MM 4.3-2, and MM 4.3-6 and well as Valley Fever specific mitigation measures required under Mitigation Measures MM 4.3-4 and MM 4.3-11, which include implementation of Valley Fever Provisions and payment of Valley Fever education fees. Implementation of these mitigation measures would reduce these impacts to less than significant. However, 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<sub>2.5</sub> and contribute to the transmission of respiratory diseases like COVID-19. Similar to the Project, this alternative would also implement Mitigation Measures MM 4.3-10, in addition to Mitigation Measures MM 4.3-1 through MM 4.3-9. Even with implementation of Mitigation Measures MM 4.3-1 through MM 4.3-11, the uncertainty of the project's regional and localized health impacts associated with criteria air pollutants, such as PM<sub>2.5</sub> along with indirect linkages of criteria pollutants and COVID-19, on vulnerable populations would result in significant and unavoidable project level impacts.

Overall, even with implementation of similar mitigation proposed for the project, impacts to project and cumulative air quality under this alternative would likely remain significant and unavoidable. The Reduced Acreage Alternative would result in less overall impacts related to air quality compared to the project.

# **Biological Resources**

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would

also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

As it relates to impacts on candidate, sensitive, or a special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS, as with the project, the Reduced Acreage Alternative would have an impact to California jewelflower, Lemmon's jewelflower, Tejon poppy, Bakersfield cactus, Blunt-nosed leopard lizard, burrowing owl, San Joaquin kit fox, and migratory birds. With implementation of Mitigation Measures MM 4.4-1 through MM 4.4-10, which generally include conducting preconstruction surveys and implementing avoidance procedures, among other measures, impacts would be reduced to less than significant. However, as this alternative would avoid disturbing 164 acres of land within the southwestern parcel of the project site, the Reduced Acreage Alternative would directly reduce the impact to biological resources.

With regard to impacts on any riparian habitat or other sensitive natural community, or jurisdictional waters, identified in local or regional plans, policies, or regulations or by CDFW or USFWS, construction activities could result in significant impacts related to approximately two ephemeral drainages that were identified along the gen-tie portion of the project site. However, similar to the project, of the Reduced Acreage Alternative would implement Mitigation Measures MM 4.4-11 and MM 4.4-12, which require implementation of BMPs and preparation of a delineation report, to reduce impacts to less than significant.

As it relates to the movement of any resident or migratory fish or wildlife species, similar to the project, the development of the Reduced Acreage Alternative could restrict the passage for the San Joaquin kit fox and, as such, would implement Mitigation Measure MM 4.4-13, which would require openings during operation to enable wildlife from moving freely through the project site and would serve to reduce impacts to less than significant.

Implementation of the above referenced mitigation measures would also reduce potential impacts to state or federally protected wetlands and consistency with local policies and ordinances protecting biological resources. The Reduced Acreage Alternative, as with the project, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

Based on the above, project-level impacts under the Reduced Acreage Alternative would be less than significant with implementation of mitigation. 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 San Joaquin Valley. However, as this alternative would avoid disturbing 164 acres of land within the southwestern parcel, the Reduced Acreage Alternative would result in less impact related to candidate, sensitive or special-status species as well as impacts related to any riparian habitat or other sensitive natural community when compared to the project. All other impacts related to biological resources would be similar compared to the project.

#### **Cultural Resources**

While no historical or archaeological resources were identified, ground-disturbing activities associated with the project have the potential to encounter undocumented archaeological resources that could qualify as historical resources. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.5-1 and MM 4.5-4, which include measures to retain a Lead Archaeologist, preparation of a Cultural Resources Treatment Plan, retaining the services of Native American Tribal Monitors, and measures to implement when archaeological materials are encountered during the course of grading or construction. In addition, there is no indication that any particular location within the project site has been used for purposes of human burial in the recent or distant past. However, in the unlikely event that human remains are inadvertently discovered during project construction activities, implementation of Mitigation Measure MM 4.5-5, which provides measures to implement when human remains are uncovered during project construction, would ensure that any human remains encountered are appropriately addressed and impacts would be less than significant.

Based on the above, implementing mitigation similar to the mitigation proposed for the project, impacts to cultural resources under this alternative would be less than significant. However, the Reduced Acreage Alternative would result in less impacts related to cultural resources compared to the project due to the reduction in ground disturbance required under this alternative.

#### Energy

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

Eliminating 650 acres from project development would result in reduced energy use, as the Reduced Acreage Alternative would generate approximately 86 MW, a reduction from 115 MW as generated under the project, due to the proportional reduction in project size. Therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced as compared with the project. Similar to the project, the Reduced Acreage Alternative would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. In addition, the fuel efficiency of the vehicles being used by the employees and visitors under this alternative is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. As the Reduced Acreage Alternative would implement Mitigation Measures MM 4.3-5 and MM 4.3-7 required for air quality, as discussed above, implementation of these measures would also help to reduce unnecessary fuel consumption during project construction. As such, the wasteful, inefficient, or unnecessary consumption of energy resources would be reduced in comparison with the project. Similar to the project, this alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be less than significant. The Reduced Acreage Alternative would result in less energy impacts compared to the project as less fuel consumption during construction and operation would occur.

# **Geology and Soils**

Construction of the Reduced Acreage Alternative would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the CBC 2019 Edition (CCR Title 24). Adherence to all applicable regulations would mitigate any potential fault rupture-related impacts associated with this alternative. In addition, similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.7-1, which requires that a geotechnical study to evaluate soil conditions and geologic hazards be performed by a qualified geotechnical engineer on the project site as well as implementation of Mitigation Measure MM 4.7-2, which would require that all structure proposed under this alternative, including the BESS and associated infrastructure, and onsite substation adhere to the specifications, procedures, and site conditions contained in the final design plans. Implementation of these mitigation measures, as with the project, would serve to reduce impacts related to strong seismic ground shaking, unstable geologic unit, and expansive soils. In addition, with regard to soil erosion and loss of topsoil, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.7-3 and MM 4.7-4, which include incorporating BMPs consistent with the NPDES Program and limiting grading to the minimum area necessary for construction. Additionally, no septic tanks are proposed under this alternative. As it relates to unique paleontological resource or site or unique geologic feature, similar to the project, under the Reduced Acreage Alternative any ground disturbance within the project site could result in a potentially significant impact to paleontological resources. As such, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.7-5 through MM 4.7-7, which would include retention of a qualified paleontologist and implementation of measures if a paleontological resource is found during construction, 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 project, impacts to geology and soils would likely be less than significant, and impacts to geology and soils would be less compared to the project due to the reduction in ground disturbance required under this alternative.

#### **Greenhouse Gas Emissions**

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

Given a smaller project footprint than the project, the Reduced Acreage Alternative would result in fewer GHG emissions during construction and operations when compared with the project. Eliminating 164 acres from project development would result in reduced energy use, as the Reduced Acreage Alternative would generate approximately 86 MW, a reduction from 115 MW as generated under the project, due to the proportional reduction in project size. As such, impacts related to GHG emissions would be greater under this alternative as compared to the project due to the lower output of energy produced under this alternative.

# Hazards and Hazardous Materials

Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-2, MM 4.9-3, and MM 4.17-1, which would require preparation of a Hazardous Materials Business Plan; testing for leaks and remediation; provision of 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 require that an onsite recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes, respectfully. Implementation of these mitigation measures would reduce impacts related to the public or environment through the routine transport, use, or disposal of hazardous materials and through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

As project site is not within 0.25 miles of an existing or proposed school, is not included on a list of hazardous materials sites, nor is the project site within the Kern County Airport Land Use Plan, the Reduced Acreage Alternative would have less than significant impacts, similar to the project.

Similar to the project, the Reduced Acreage Alternative is not anticipated to physically interfere with emergency vehicle access or personnel evacuation from the site during construction or operation of this alternative. However, as with the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.15-1, which requires preparation and submittal of a Construction Traffic Control Plan and would provide further assurances for emergency access. In addition, as this alternative would not develop the southwestern parcel, the easement on the southwestern parcel would not be required to be lifted under this alternative, and Mitigation Measure MM 4.9-4 would not be required to be implemented.

As it relates to wildland fires, the project site is not within an area of high or very high fire hazard. However, similar to the project, the Reduced Acreage Alternative would include an energy storage facility component which, while they generally burn with difficulty, can in fact burn or become damaged by fire and generate fumes and gases that are extremely corrosive. Mitigation Measure MM 4.14-1 would be implemented which includes the development and implementation of a fire safety plan for construction and operation of the project in the event of a fire on the project site.

Impacts under the Reduced Acreage Alternative and the project would result in less-than-significant impacts after implementation of mitigation measures and the potential impacts from hazards and hazardous materials under the Reduced Acreage Alternative would be similar compared to the project.

# Hydrology and Water Quality

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

Similar to the project, the Reduced Acreage Alternative would include completion of a NPDES completion form, and would implement Mitigation Measure MM 4.7-3, which would require implementation of a SWPPP, which includes BMPs to prevent the occurrence of soil erosion and discharge. This alternative would also implement Mitigation Measure MM 4.9-1, which would require the provision of a Hazardous Materials Business Plan. Furthermore, as hazardous materials can mix with stormwater and degrade water quality, this alternative, as with the project, would implement Mitigation Measure MM 4.10-1, which requires preparation of a drainage plan. Implementation of these mitigation measures would serve to reduce impacts related to violating water quality standards or waste discharge requirements; substantially altering

drainage patterns; creating or contributing runoff water that would exceed the capacity of existing for planned storm water drainage systems; and placing the project within a 100-year flood hazard area.

As it relates to groundwater supplies, water requirements under the Reduced Acreage Alternative, overall construction and operation related water requirements would be reduced under this alternative as compared to the project as less grading would be involved during construction, and operation would have fewer solar panels. Similar to the project, water demands would be met through existing water distribution lines that occur along the perimeter of the site. An agreement has been made with TCWD to use up to 2 acre-feet per year from four different existing turnouts. As water demand under this alternative would be less than that of the project, it is assumed that water demand under the Reduced Acreage Alternative would also be sufficiently supplied by this agreement. Therefore, this alternative would not substantially deplete ground water supplies or interfere substantially with groundwater recharge. Furthermore, this alternative would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan as the Reduced Acreage Alternative would require BMPs and drainage control requirements that would be consistent with the Basin Plan.

The project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards and impacts would be less than significant.

Overall, impacts related to hydrology and water quality would be less than significant with implementation of mitigation measures similar to those implemented under the project. However, the Reduced Acreage Alternative would have less impact related to hydrology and water quality compared to the project due to the reduced footprint, which would result in reduced grading activities and would reduce the amount of impervious surfaces compared to the project.

# Land Use and Planning

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

While the footprint would be reduced, development of the Reduced Acreage Alternative would still require GPAs or CUPs to operate a solar facility on the project site. Impacts would be less than significant under this alternative. Land use and planning impacts would be similar under the Reduced Acreage Alternative when compared to the project.

# Mineral Resources

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

While there are oil and gas wells located on the project site, these oil and gas wells have been plugged and were classified by CalGEM, as dry hole wells, which are defined as wells that have not encountered hydrocarbons in economically producible quantities. As such, development of the Reduced Acreage Alternative would not result in the loss of availability of a known mineral resource or locally important

mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, impacts would be less than significant under the Reduced Acreage Alternative and would result in similar impacts related to mineral resources compared to the project.

#### Noise

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

Under this alternative, as the number of onsite construction equipment is assumed to be similar under this alternative on a daily basis, as with the project, construction and decommissioning activities the Reduced Acreage Alternative would not result in any impacts related to noise as the closest existing residence exceeds 2.5 miles. As with the project, operational activities under the Reduced Acreage Alternative would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards. Impacts would be less than significant. In addition, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.13-1 through MM 4.13-3, similar to the project.

As the closest offsite occupied residential structures would be located over 2.5 miles from construction activities, the vibration levels at the nearest residences would not reach the vibration level threshold for older residential structures during construction or decommissioning. Operation of the Reduced Acreage Alternative would involve worker truck trips and agricultural equipment use that would be a sufficient distance from structures (i.e., over 100 feet away from structures). A such, vibration impacts would be minimal and are not expected to have any measurable effect on the adjacent offsite sensitive receivers.

Based on the above, this alternative is expected to result in less than significant construction noise, construction, vibration and operational noise impacts. These impacts would be less than those of the project given the reduced footprint under the Reduced Acreage Alternative.

#### **Public Services**

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

Similar to the project, construction of the Reduced Acreage Alternative would result in a number of construction workers on the project site and increased fire service demands would occur during construction of this alternative. However, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-1, which would require the implementation of a fire safety plan. During operation, the project site would not require any additional employees to be onsite on a permanent basis. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-2, which would require the project operator to pay Kern County development impact fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation of this alternative. Implementation of Mitigation Measure MM 4.14-1 would also reduce fire risks onsite during operation of this alternative. Implementation of Mitigation is to fire protection would be less than significant with mitigation.

With regard to law enforcement protection, the project site is located in a relatively remote location. 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, a security fencing would be installed around the perimeter of the northwestern and eastern parcels, which would be approximately 6 feet tall, topped with 1-foot barbed wire (three strands). 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, impacts to the CHP patrol are not anticipated. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.14-2, which would require the project operator to pay Kern County development impact fees to compensate for any permanent impacts to law enforcement protection services resulting from the operation of this alternative.

Based on the above, impacts would be less than significant under this alternative following implementation of similar mitigation measures proposed for the project and impacts related to public services would be similar compared to the project.

### Transportation

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

Similar to the project, during construction of the Reduced Acreage Alternative, which would require similar construction trips for installation of the solar panels, it is anticipated that local traffic would not change from the existing LOS B or C operations with the addition of construction traffic generated under this alternative. During operation of this alternative, day to day operations and maintenance trips would be reduced in comparison with those of the project. Similar to the project, the number of added vehicles to the roadway network would not have a discernable effect on roadway operations or levels of service.

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 project.

As it relates to increasing hazards due to a geometric design feature or incompatible use, similar to the project, the Reduced Acreage Alternative would also require the use of oversized vehicles during construction which could create a hazard to the public by limiting motorist views and by the obstruction of space. As with the project, this alternative would implement Mitigation Measure MM 4.15-1, would require that all oversize vehicles used on public roadways during construction obtain required permits and obtain approval of a Construction Traffic Control Plan, as well as identify anticipated construction delivery times and vehicle travel routes in advance to minimize construction traffic during AM and PM peak hours.

With regard to emergency access, as this alternative would not cause a significant increase in congestion or significance worsen the existing service levels at intersection roadways, the Reduced Acreage Alternative would have a less-than significant impact on emergency access during construction and operation. As with the project, the Reduced Acreage Alternative would also implement Mitigation Measure MM 4.15-1, which would provide further assurances for emergency access.

Based on the above, impacts would be less than significant. Given the reduction in operational trips under this alternative's as compared to the operational trips required under the project, the Reduced Acreage Alternative impacts related to transportation would be less compared to the project.

### **Tribal Cultural Resources**

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection. Under the Reduced Acreage Alternative all overall construction and operational methods, workforce, and timing would be reduced when compared with the project. A portion of the Sebastian Indian Reservation California Historic Landmark (P-15-007674/CHL 133), is located approximately 1 mile south of the project site. Given the proximity to this landmark, ground-disturbing activities associated with the project may have the potential to encounter tribal cultural resources and this alternative would implement Mitigation Measures MM 4.5-1, MM 4.5-2, MM 4.5-3, and MM 4.5-4, similar to the project. With implementation of mitigation similar to the mitigation proposed for the project, impacts to tribal cultural resources under this alternative would be less than significant. However, the Reduced Acreage Alternative would result in less impacts related to tribal cultural resources compared to the project due to the reduction in ground disturbance required under this alternative.

### **Utilities and Service Systems**

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

Eliminating 164 acres from project development would result in reduced demand for utilities and service systems, as the Reduced Acreage Alternative would generate approximately 86 MW, a reduction from 115 MW as generated under the project, and therefore, all construction and operational methods, workforce, and timing for the Reduced Acreage Alternative would be reduced in comparison with the project.

As with the project, installation of solar panels would require water usage for dust suppression as well as minimal generation of wastewater, usage of electrical power, natural gas, and telecommunications. In addition, construction of the Reduced Acreage Alternative would not substantially alter stormwater drainage. As with the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.7-3, which would require the implementation of a SWPPP during construction, which would include BMPs designed to prevent the occurrence of soil erosion and discharge of other construction-related pollutants that could contaminate water quality. An increase in solid waste generation under the Reduced Acreage Alternative would implement Mitigation Measure MM 4.17-1, which would require the provision of a recycling coordinator to ensure the separation and proper disposal of recyclable materials and solid waste during construction.

With regard to operation, the solar panels installed under the Reduced Acreage Alternative would require a reduced water demand in comparison with the project. An agreement has been made with TCWD to use up to 2 acre-feet per year from four different existing turnouts. As water demand under this alternative would be less than that of the project, it is assumed that water demand under the Reduced Acreage Alternative would also be sufficiently supplied by this agreement. Wastewater and solid waste generation associated with this alternative would also be reduced compared to the project due to the reduced number of employees required for maintenance of the solar panels. As with construction above, and similar to the project, implementation of Mitigation Measure MM 4.17-1 would require the provision of a recycling coordinator to ensure the separation and proper disposal of recyclable materials and solid waste generated during project operation. As the Reduced Acreage Alternative would develop the project site, impervious surfaces would be minimized as much as possible, as with the project. Similar to the project, the Reduced Acreage Alternative would implement Mitigation Measure MM 4.10-1, which requires preparation of a drainage plan to reduce potential increases in stormwater runoff onsite and would detail any necessary physical structures required to control stormwater.

This alternative is expected to result in less-than-significant impacts to utilities and service systems and impacts would be less compared to the project as water, wastewater, and solid waste generation would be reduced compared to the project due to the reduced acreage and number of employees required for maintenance of the solar panels.

#### Wildfire

Under the Reduced Acreage Alternative, the project would reduce its footprint from 650 acres to 486 acres and would generate up to 86 MW of renewable electric energy. The Reduced Acreage Alternative would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project and the gen-tie interconnection.

As with the project, this alternative is not classified as being within a high fire hazard severity zone and is not anticipated to physically impede the existing emergency response plans, emergency vehicle access, or personnel access to the site. The site is located in a rural, sparsely developed areas with limited population. The project site is not located along an identified emergency evacuation route and is not identified in any adopted emergency evacuation plan. Also in compliance with applicable Fire Code and Building Code requirements, construction managers and personnel would be trained in fire prevention and emergency response. Therefore, the Reduced Acreage Alternative would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The project site is designated as LRA Unzoned, which are considered areas with low fire frequency. The potential for wildfire on the project site is not considered high. Similar to the 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 and operation, which would further reduce the fire risks onsite. As such, impacts under this alternative related to exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would be less than significant.

With regard to the installation or maintenance of associated infrastructure, solar panels would require installation of the electrical collector line, similar to the project. The installation of the electrical collector line would not be placed within a high fire hazard zone and the vegetation would be cleared and thus would not result in increased fire risks that could result in temporary or ongoing impacts to the environment.

Similar to the project, the development proposed under the Reduced Acreage Alternative could alter the existing drainage patterns and flowpaths compared to existing conditions as well as increase impervious surfaces. As with the project. The Reduced Acreage Alternative would implement Mitigation Measure

MM 4.10-1, which requires preparation of a drainage plan. This mitigation measures would minimize potential increases in runoff and ensure that the retention basins and other stormwater management features are implemented to minimize erosion and sedimentation to less than significant. As such, similar to the project, the Reduced Acreage Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation proposed for the project, this alternative is expected to result in less-than-significant impacts to wildfire. The Reduced Acreage Alternative would likely result in less impact compared to the project due to the reduced footprint compared to the project. However, given the location in a rural area and limited infrastructure, the project and related projects have the potential to result in significant and unavoidable cumulative impacts related to wildfire.

# **Comparison of Impacts**

The Reduced Acreage Alternative would be reduced in size compared to the project, and would generate approximately 86 MW, a reduction from 115 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 project. Due to the reduced footprint, the Reduced Acreage Alternative would result in less or similar impacts for the majority of environmental issue areas. However, this alternative would result in greater impacts to GHG emissions given is reduced solar energy output. In addition, this alternative would not eliminate significant and unavoidable impacts associated with aesthetics (project and cumulative), agriculture and forestry resources (project and cumulative), air quality (project and cumulative), biological resources (cumulative only), and wildfire (cumulative only).

# **Relationship to Project Objectives**

Under the Reduced Acreage Alternative, the project would develop the northwestern and eastern parcels with a solar facility with the capacity to generate up to 86 MW of renewable electric energy, a reduction of 115 MW as proposed under the project. Development of the northwestern and eastern parcels would also include construction of a substation, a BESS, and associated infrastructure on a 4.5-acre portion of the eastern parcels, similar to the project. The gen-tie interconnection would remain unchanged. As the southwestern parcel would not be developed, the project's footprint would be reduced from 650 acres to 486 acres. As such, the Reduced Acreage Alternative would achieve all of the project objectives listed above in Section 6.2 to a lesser degree as compared to the project due to the reduction in solar panels proposed under this alternative.
# 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 Southern San Joaquin Valley.

With regard to impacts related to scenic vistas, there are no officially designated scenic vistas within the vicinity of the project site. However, the viewshed of the Tehachapi and San Emigdio Mountains experienced by persons traveling south on I-5 in passenger vehicles could be considered a scenic vista. With the No Ground-Mounted Utility-Solar Development Alternative, solar installation would occur on the roofs of the existing buildings. In addition, installation of solar panels on rooftops of commercial and industrial facilities dispersed throughout the Southern San Joaquin Valley would not substantially change the viewshed of the Tehachapi and San Emigdio Mountains. Thus, given that there are no officially designated scenic vistas and development under this alternative would be dispersed throughout Southern San Joaquin Valley, the No Ground-Mounted Utility-Solar Development Alternative would not have a substantial adverse effect on a scenic vista.

As with the project, the No Ground-Mounted Utility-Solar Development Alternative is located approximately 50 miles west of these Eligible State Scenic Highways and is separated from these highways by the Tehachapi Mountains. Given this distance and intervening topography, the No Ground-Mounted Utility-Solar Development Alternative project would not be visible from any Officially Designated or Eligible State Scenic Highway.

The installation of small to medium solar PV systems on large commercial and industrial rooftops would be visually unobtrusive or unnoticeable from receptors at ground level. However, from other vantage points, the installation of rooftop small to medium solar PV systems may be visible, but would not likely affect the visual character or quality of an area, because the character or quality of an area has already been altered as a result of the existing building's construction. The exceptions may be if rooftop solar were proposed on historic buildings, which could affect the historic character and integrity of the buildings. Implementation of this alternative would require historic surveys and investigations to evaluate the eligibility of potentially historic structures that are over 50 years old, and either avoidance of such buildings, or incorporation of design measures to minimize impacts on historic integrity of historically significant structures.

With regard to light and glare, construction and operation of the No Ground-Mounted Utility-Solar Development Alternative would require implementation of Mitigation Measures MM 4.1-4 through MM 4.1-6, similar to the project. Impacts related to light and glare under the No Ground-Mounted Utility-Solar Development Alternative site would be less than significant.

Based on the above, this alternative would avoid significant and unavoidable project level and cumulative impacts related to visual character and quality that would occur under the project. With implementation of

mitigation measures to address impacts related to historic buildings, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to aesthetics compared to the project.

#### Agriculture and Forestry Resources

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout Southern San Joaquin Valley. Since the solar PV systems proposed for this alternative would be constructed on existing structures, this alternative would not create any changes in the existing environment that would convert land that is designated Farmland or forest land to non-agricultural or non-forest uses. In addition, the Williamson Act Contract on the project site would not be required to be cancelled. As such, no impacts to agriculture or forestry resources would occur and the project-level and cumulative significant and unavoidable impacts related to the cancellation of an open space contract would be eliminated. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to agriculture and forestry resources compared to the project as this alternative would not require ground disturbance.

### Air Quality

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout Southern San Joaquin Valley. Under this alternative, no construction activities associated with ground disturbance would occur. Emissions would be limited to trucks transporting the solar panels and minor ground disturbance. The No Ground-Mounted Utility-Solar Development Alternative required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Mitigation measures would be implemented as necessary to ensure that impacts are reduced as it relates to regional and localized construction emissions, visibility impacts, toxic air contaminants, valley fever exposure, and asbestos. Thus, this alternative would eliminate the significant and unavoidable cumulative construction impacts related to a cumulatively considerable net increase of any criteria air pollutant for which the projects' region is in nonattainment (i.e., NOx, CO, and PM<sub>10</sub>) and implementation of applicable air quality plans. During operation, this alternative would have similar impacts on air quality as the project related to occasional vehicular visits for maintenance. As such, operational impacts would be less than significant. Overall, air quality impacts under the No Ground-Mounted Utility-Solar Development Alternative would be less than significant. Therefore, this alternative would result in less impacts related to air quality compared to the project as this alternative would result in a substantial reduction in construction activities.

### **Biological Resources**

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout Southern San Joaquin Valley. The project site would remain undeveloped and only developed areas, typically on the rooftops of commercial and industrial facilities, in the Southern San Joaquin 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 4.4-9 and MM 4.4-11 through MM 4.4-13 would not be required. Operation of the small to medium solar PV systems would continue to require implementation of Mitigation Measure MM 4.1-10. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would not contribute to a cumulative loss of the California jewelflower, Lemmon's jewelflower, Tejon poppy, Bakersfield cactus, Blunt-nosed leopard lizard, burrowing owl, San Joaquin kit fox, and migratory birds. As such, significant and unavoidable cumulative impacts would be eliminated as well. The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to biological resources compared to the project as this alternative would not require ground disturbance.

#### **Cultural Resources**

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout Southern San Joaquin Valley. Given that development would occur on the rooftops of existing structures, there would be no potential for disturbance or damage to buried archaeological resources and human remains. If rooftop solar systems were proposed on historic buildings, this alternative could affect the historic character and integrity of these buildings, as well as the character and views of adjacent historical resources. However, historic surveys and investigations would be conducted prior to project construction to identify known eligible historical resources and to evaluate the eligibility of potentially historic structures that are 45-years or older; historic structures would be either avoided or the alternative would be required to incorporate mitigation and design measures to minimize the impact on these structures. In the case of eligible historical resources, design measures must be in accordance with the Secretary of the Interior standards and the impact must not affect the eligibility of such resources or adjacent resources. Therefore, unanticipated impacts to unknown or known cultural resources would not occur under this alternative. Impacts would be less than significant. With the appropriate mitigation measures in place to reduce impacts to historical resources, the potential to disturb or discover unknown cultural resources within the project area would be less than significant. However, given the inability to impact archaeological resources under this alternative, the No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to cultural resources compared to the project as this alternative would not require ground disturbance.

#### Energy

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout Southern San Joaquin 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. 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 operation would be limited to occasional vehicular visits for maintenance, as with the Project, the No Ground-Mounted Utility-Solar Development Alternative would result in similar impacts related to cultural resources compared to the 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 Southern San Joaquin Valley. Given that only developed areas would be modified, the No Ground-Mounted Utility-Solar Development Alternative would not directly or indirectly cause potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic- related ground failure, and landslides; result in substantial soil erosion or loss of topsoil; result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse; be located on expansive soil; soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems; or directly or indirectly destroy a unique paleontological resource or unique geologic feature. The No Ground-Mounted Utility-Solar Development Alternative would not require implementation of Mitigation Measures MM 4.7-1 through MM 4.7-7. Development of rooftop solar would 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 project as this alternative would not require ground disturbance.

#### Greenhouse Gas Emissions

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities. This alternative would not generate GHG emissions from heavy equipment required for ground disturbing activities, but distributed systems on rooftops would lack tracking systems and be less efficient. As such, this alternative's overall GHG emission offset potential would be smaller to the project. Therefore, the No Ground-Mounted Utility-Solar Development Alternative would have less-than-significant impacts related to generating GHG emissions that may have a significant impact on the environment or consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. However, impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology.

#### Hazards and Hazardous Materials

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout Southern San Joaquin Valley. The installation of rooftop solar equipment on existing structures would involve fewer hazardous materials (such as chemicals and fuels) than the project construction on the undeveloped project site. Similar to the project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measures MM 4.9-1, MM 4.9-3, and MM 4.17-1, which would require preparation of a Hazardous Materials Business Plan; regulate the use of herbicides; as well as require that an onsite recycling coordinator be designated by the project proponent to facilitate recycling of all waste through coordination with the onsite contractors, local waste haulers, and/or other facilities that recycle construction/demolition wastes, respectfully. Mitigation Measure MM 4.9-2 would not be required as the solar panels would be located on the rooftops of commercial and industrial facilities and leaking oil wells would not be of concern. Implementation of these mitigation measures would reduce impacts related to the public or environment through the routine

transport, use, or disposal of hazardous materials and through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Under the No Ground-Mounted Utility-Solar Development Alternative, while it is unknown where the location of the small to medium solar PV systems would be installed, with implementation of the mitigation measures above and with compliance of all regulatory requirements, this alternative would not have an impact to any schools within 0.25 miles of the installation sites, creating a significant hazard to the public or environment, and or result in a safety hazard or excessive noise for people residing or working in the project area within the Kern County Airport Land Use Plan, the No Ground-Mounted Utility-Solar Development Alternative would have less than significant impacts, similar to the project.

Similar to the project, the No Ground-Mounted Utility-Solar Development Alternative is not anticipated to physically interfere with emergency vehicle access or personnel evacuation from the site during construction or operation of this alternative. However, as with the project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measure MM 4.15-1, which would provide further assurances for emergency access. In addition, as the easement on the southwestern parcel would not be required to be lifted under this alternative, Mitigation Measure MM 4.9-4 would not be required to be implemented.

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 Southern San Joaquin Valley, it is expected that these areas where the solar PV systems would be installed would be in more urbanized areas that would not require a battery storage component. However, due to the numerous power lines that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks. As such, similar to the project, Mitigation Measure MM 4.14-1 would be implemented to reduce wildfire risks under this alternative.

Based on the above, impacts under this alternative would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to hazards and hazardous materials compared to the 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 Southern San Joaquin Valley. No ground disturbance related to construction would be required under this alternative.

Compliance with the NPDES Construction General Permit, including development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), would not be required under the No Ground-Mounted Utility-Solar Development Alternative, thus eliminating implementation of Mitigation Measures MM 4.7-3 and MM 4.10-1. Similar to the project, this alternative would require implementation of Mitigation Measure MM 4.9-1, which would require the provision of a Hazardous Materials Business Plan. Implementation of this mitigation measure would reduce potential impacts related to violating water quality standards or waste discharge requirements; creating or contributing runoff water that would exceed the capacity of existing for planned storm water drainage systems; and placing the project within a 100-year flood hazard area.

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 Southern San Joaquin

Valley, drainage patterns and flow paths would not be altered. As such, impacts related to drainage patterns would be less than significant.

As it relates to groundwater supplies, water requirements under the No Ground-Mounted Utility-Solar Development Alternative, would be reduced as compared to the water requirements of the project as limited dust suppression or concrete mixing would be required during construction and operational panel washing is expected to be less frequent given the location of panels on top of buildings (rather than directly on sediment). As such, this alternative would not substantially deplete groundwater levels in comparison to existing conditions. In addition, as solar panels would be installed on rooftops of existing commercial and industrial facilities, no change in pervious surfaces would occur. As such, impacts would be less than significant. Furthermore, this alternative would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan as ground disturbance would not occur and no water from ground water would be required to be drawn under this alternative.

The project site is located well inland and far from the ocean or any enclosed or semi-enclosed water body such that there would be no potential threat from tsunami or seiche hazards and impacts would be less than significant.

Overall, impacts related to hydrology and water quality would be less than significant. However, the No Ground-Mounted Utility-Solar Development Alternative would result in less overall impacts related to hydrology and water quality materials compared to the project as this alternative would not require ground disturbance, which could potentially introduce more pollutants to stormwater, and water requirements during construction and operation of the this alternative would be reduced as no dust suppression or concrete mixing would be required during construction and operational panel washing is expected to be less frequent.

#### Land Use and Planning

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout Southern San Joaquin Valley. Under this alternative, there would be no GPAs or CUPs required. Installation of rooftop solar would be consistent with current zoning as well as existing land use plans, policies, and regulations. The No Ground-Mounted Utility-Solar Development Alternative would also achieve the County's goals and policies relative to accommodating renewable energy facilities. However, the placement of solar panels on other structures throughout the region would result in unknown entitlement requirements, depending on the project location, zoning, land use, and potential environmental impacts on the site and surrounding areas. Nonetheless, to allow such development, the project proponent would be required to comply with the specific entitlements needed to construct solar PV systems consistent with this alternative. Impacts would be less than significant. Impacts to land use and planning under the No Ground-Mounted Utility-Solar Development Alternative would be greater compared to the 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 Southern San Joaquin 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 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 facilities would be located in developed areas. As a result, noise related to construction activities would likely impact sensitive receptors during construction. However, as with the project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measures MM 4.13-1 through MM 4.13-3. The operational noise generated from these solar PV systems would be similar to that of the project and would result in less-than-significant impacts. With regard to vibration, construction of the No Ground-Mounted Utility-Solar Development Alternative would not require the use of vibratory rollers or other construction equipment with high groundborne vibration levels. Therefore, it is likely that the No Ground-Mounted Utility-Solar Development Alternative would have a less than significant construction vibration impact. Similar to the project, operation of the No Ground-Mounted Utility-Solar Development Alternative would require regular maintenance trucks (0.076 in/sec PPV) and panel washing activities. Whether rooftop solar systems are proposed on historic buildings, which are more susceptible to vibration damage, or other types of newer buildings, this level of vibration would not exceed vibration thresholds and, as such, would result in less-than-significant impacts.

As discussed above, construction and operational vibration impacts and operational noise impacts would be less than significant and would result in less impacts related to noise compared to the 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 Southern San Joaquin Valley and the project site would remain undeveloped. Unlike the project, the No Ground-Mounted Utility-Solar Development Alternative would not introduce structures into a currently undeveloped area and is not expected to temporarily or permanently increase the concentration of persons in an area.

With regard to fire protection, it is expected that the areas where the solar PV systems would be installed in more urbanized areas. However, due to the numerous power lines that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks. As such, similar to the project, Mitigation Measure MM 4.14-1 would be implemented to reduce wildfire risks under this alternative. In addition, similar to the project, in the event that a fire occurs during operation of the No Ground-Mounted Utility-Solar Development Alternative, this alternative would implement Mitigation Measure MM 4.14-2, which would require the project operator to pay Kern County development impact fees to compensate for any permanent impacts to fire protection services and facilities resulting from the operation of this alternative. Impacts related to fire protection would be less than significant with mitigation.

With regard to law enforcement protection, as the proposed small to medium solar PV systems would be installed in more urbanized areas on existing buildings, it is unlikely that construction and operation of the No Ground-Mounted Utility-Solar Development Alternative would attract attention. Similar to the project, this alternative would increase traffic with truck trips during construction and routine maintenance during

operation of this alternative. However, the additional volume of trips during construction and operation would be minimal and would not likely have a significant and adverse effect on the KCSO protective service provision or CHP's ability to patrol the highways. Impacts would be less than significant.

Based on the above, impacts are expected to be less than significant with mitigation. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to public services compared to the project as the proposed small to medium solar PV systems would be developed in urbanized areas that already receive fire protection and law enforcement protection services.

### Transportation

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of existing commercial and industrial facilities situated throughout Southern San Joaquin Valley.

Similar to the project, this alternative would require vehicular trips during construction to transport and install the solar panels. However, the trips would be more dispersed than the project given the location of the existing facilities, thereby reducing impacts on the roadways surrounding the project site. As such, roadway segments within Southern San Joaquin Valley are not expected to operate at levels that would trigger a significant transportation impact during construction of this alternative. During operation of this alternative, day to day operations and maintenance trips would be similar to those of those of the project. However, as with construction, these maintenance trips would be more dispersed than the project given the location of the existing facilities. Similar to the project, the number of added vehicles to the roadway network would not have a discernable effect on roadway operations or levels of service.

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 No Ground-Mounted Utility-Solar Development Alternative, as with the project.

As it relates to increasing hazards due to a geometric design feature or incompatible use, similar to the project, the No Ground-Mounted Utility-Solar Development Alternative would also require the use of oversized vehicles during construction which could create a hazard to the public by limiting motorist views and by the obstruction of space. As with the project, this alternative would also implement Mitigation Measure MM 4.15-1, which would 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.

With regard to emergency access, as this alternative would not cause a significant increase in congestion or significance worsen the existing service levels at intersection roadways, the No Ground-Mounted Utility-Solar Development Alternative would have a less-than significant impact on emergency access during construction and operation. As with the project, the No Ground-Mounted Utility-Solar Development Alternative would also implement Mitigation Measure MM 4.15-1, which would provide further assurances for emergency access.

Based on the above, impacts would be less than significant. The No Ground-Mounted Utility-Solar Development Alternative would result in less impact related to transportation compared to the project due to the dispersed nature of the construction and operational trips.

### **Tribal Cultural Resources**

Under the No Ground-Mounted Utility-Solar Development Alternative, a number of geographically distributed small to medium solar PV systems would be developed, typically on the rooftops of commercial and industrial facilities situated throughout Southern San Joaquin Valley. It is unlikely that the proposed rooftop solar systems would have an impact on tribal cultural resources. However, prior to construction of this alternative, the Native American Heritage Commission will be contacted for a search of the Sacred Land File for the No Ground-Mounted Utility-Solar Development Alternative construction area. In addition, the County will conduct additional consultation with California Native American tribes on the County's Master List for AB 52, apprising them of the alternative project description. Due to the nature of the No Ground-Mounted Utility-Solar Development Alternative, it is highly unlikely to have an impact on tribal cultural resources. It is anticipated that the Sacred Land File and consultation would not result in the identification of any tribal cultural resources that could be impacted by the No Ground-Mounted Utility-Solar Development Alternative directly or indirectly, however should it be determined the potential exists, this alternative will avoid impacting any such resources through avoidance and re-design. As such, the No Ground-Mounted Utility-Solar Development Alternative would have no impact to tribal cultural resources and no mitigation would be required. Furthermore, the No Ground-Mounted Utility-Solar Development Alternative would result in similar impacts related to tribal cultural resources compared to the 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 Southern San Joaquin Valley.

With regard to water demand, the No Ground-Mounted Utility-Solar Development Alternative would likely require minimal water as no dust suppression or concrete mixing would be required during construction. This alternative would also require minimal generation of wastewater and usage of electrical power, natural gas, and telecommunications. In addition, construction of the No Ground-Mounted Utility-Solar Development Alternative would not substantially alter stormwater drainage.

With regard to operation, solar panel washing is expected to be less frequent, as compared to the project, given the location of panels on top of buildings throughout Southern San Joaquin Valley (rather than directly on sediment). As the No Ground-Mounted Utility-Solar Development Alternative would not develop the project site, this alternative would not result in impervious surfaces and implementation of Mitigation Measure MM 4.7-3, which requires implementation of a SWPPP, and Mitigation Measure MM 4.10-1, which would require preparation of a drainage plan to reduce potential increases in stormwater runoff onsite, would not be required. Wastewater and solid waste generation associated with this alternative would be similar to the project due to the similar number of employees required for maintenance of the solar panels. This alternative would implement Mitigation Measure MM 4.17-1, which would reduce impacts related to solid waste.

Based on the above, impacts to utilities and service systems would be less than significant. This alternative would result in less overall impacts related to utilities and service systems than the project due to the reduction in construction activities.

### Wildfire

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 Southern San Joaquin Valley. Due to the numerous power lines that would be required to harness the distributed solar panel energy, this alternative could exacerbate fire risks above that of the project. As such, similar to the project, the No Ground-Mounted Utility-Solar Development Alternative would implement Mitigation Measure MM 4.14-1, which would require the development and implementation of a fire safety plan for use during construction, operation, and decommissioning of the project, which would further reduce the fire risks. With regard to the installation or maintenance of associated infrastructure, solar panels would require installation of the electrical collector line, similar to the project. The installation of the electrical collector line would not be placed within a high fire hazard zone and thus would not result in increased fire risks that could result in temporary or ongoing impacts to the environment. Development of the No Ground-Mounted Utility-Solar Development Alternative would not require grading and excavation to reduce the overall slope of the project site. As such, the No Ground-Mounted Utility-Solar Development Alternative would not include significant risks related to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

With implementation of similar mitigation, this alternative is expected to result in less-than-significant impacts to wildfires. The No Ground-Mounted Utility-Solar Development Alternative would likely result in slightly less impact than the project as solar panels would be located in more urbanized areas.

With regard to cumulative wildfire impacts, given the location in a rural area and limited infrastructure, the No Ground-Mounted Utility-Solar Development Alternative and related projects have the potential to result in significant and unavoidable cumulative impacts related to conflict with an adopted emergency response plan or emergency evacuation plan, exposing people to pollutant concentrations from a wildfire, the installation or maintenance of associated infrastructure, exposing people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes.

### **Comparison of Impacts**

The No Ground-Mounted Utility-Solar Development Alternative would result in less impacts related to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, noise, public services, transportation, and utilities and service systems. Further, this alternative would avoid the significant and unavoidable impacts to aesthetics (project and cumulative), air quality (project and cumulative), biological resources (cumulative only), and wildfire (cumulative only) that would occur under the project.

### **Relationship to Project Objectives**

This alternative would partially satisfy the project objective of assisting California in meeting its greenhouse gas emissions reduction goals by 2020 and 2030 as required by the California Global Warming Solutions Act (AB 32), as amended by Senate Bill 32 in 2016. However, a BESS (a component of the project) with the ability to store up to 80 MW would not be constructed under this alternative. This alternative would not achieve other project objective including minimizing infrastructure needs and reduce potential environmental impacts by locating the facility near existing and planned infrastructure, including access to an existing substation with available transmission capacity and constructing and operating a large-scale solar energy generation facility with a battery energy storage system component to help California advance its RPS and energy storage goals. Additionally, there are some drawbacks to this alternative that include, but not limited to those listed below.

- Up to 80 MW of energy storage would not be included.
- The system would not likely be built out within a timeframe that would be similar to that of the project.
- Given the distributed nature of such a network of facilities, construction, management, and maintenance would not be as efficient, and total capital costs would likely be higher.
- The project proponent does not have immediate control or access to potential urban sites that could accommodate facilities to generate 115 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 up to 115 MW of electricity but it would be used on the sites generating the power, and would not achieve the project objective of assisting California loadserving entities in meeting their obligations under California's RPS Program. Additionally, this alternative does not include up to 80 MW of energy storage. Given the size of the project, the project objectives, and the need to arrange a suitable assemblage of participating commercial and industrial properties, it is impractical and infeasible to propose a distributed generation project of this type and still proceed within a reasonably similar timeframe.

### 6.8 Environmentally Superior Alternative

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

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

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Environmentally Superior Alternative is considered to be the No Ground-Mounted Utility-Solar Development Alternative. This alternative would avoid significant and unavoidable impacts to aesthetics, air quality, biological resources, and wildfire. Impacts related to GHG emissions would be greater under this alternative due to the lower efficiency of the distributed systems, which would not include solar tracking technology. This alternative would also result in greater impacts to land use as it would require extensive discretionary actions, such as design review, CUPs, or zone variances, depending on local jurisdictional requirements and wildfire risks due to the numerous power lines that would be required to harness the distributed solar panel energy. However, this alternative would result in less impact to aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, noise, public services, transportation, and utilities and service systems. Thus, for most environmental issue areas, this alternative would result in fewer environmental impacts, both short-term and long-term, when compared to the project.

It is important to note that it is considered to be impracticable and infeasible to construct the No Ground-Mounted Utility-Solar Development Alternative within the same timeframe and/or with the same efficiency as the project because the project proponent lacks control and access to the sites required to develop 115 MW of distributed solar generated electricity and the required land to support up to 80 MW of energy storage. In addition, this alternative would not achieve the project objective of assisting California load-serving entities in meeting their obligations under California's RPS Program. Nonetheless, because this alternative reduces impacts to a greater degree than the Agricultural Production Alternative and Reduced Acreage Alternative, the No Ground-Mounted Utility-Solar Development Alternative is considered the Environmentally Superior Alternative.

This chapter is being reserved for, and will be included with, the Final EIR.

This page intentionally left blank

### 8.1 Federal

U.S. Air Force

U.S. Army

U.S. Army Corp of Engineers

U.S. Bureau of Land Management

U.S. Department of Agriculture,

Natural Resource Conservation Service

- U.S. Environmental Protection Agency Region IX
- U.S. Fish and Wildlife Service
- U.S. Marine Corps
- U.S. Navy
- U.S. Postal Service

# 8.2 State of California

California Air Resources Board California Department of Conservation California Department of Fish & Wildlife, Fresno Region California Department of Toxic Substances Control California Department of Water Resources California Energy Commission California Native American Heritage Commission

California Public Utilities Commission, Energy Division California Regional Water Quality Control Board, Central Valley Region California State Clearinghouse California State Lands Commission California State University Bakersfield Caltrans District 6

# 8.3 Regional and Local

Arvin Community Services	Kern County Public Health	Kern Council of Governments
District Arvin-	Services Department	Kings County Planning Agency
Edison Water Storage District	Kern County Farm Bureau	Local Agency Formation
Arvin Union School District	Kern County Fire Department	Commission
AT&T	Kern County Library	Los Angeles Audubon
Center for Biological Diversity	Department	Los Angeles County
Center on Race, Poverty and the Environment, Bakersfield	Kern County Parks and Recreation Department	Native American Heritage Preservation Council of Kern
City of Arvin	Kern County Public Works	County
City of Bakersfield Defenders of Wildlife	Department Kern County Sheriff Department	Pacific Gas & Electric Company

San Bernardino County

Inyo County Planning Department Kern Audubon Society Kern County Agriculture Department Kern County Engineering, Surveying and Permit Services—Floodplain Management Kern County Engineering,

Surveying and Permit Services—Surveying Kern County Superintendent of Schools Kern County Waste Management Department Kern County Water Agency Kern High School District Kern Mosquito Abatement District San Joaquin Valley Unified Air Pollution Control District San Luis Obispo County Sierra Club—Kern Kaweah Chapter Southern San Joaquin Valley Information Center Tulare County

## 8.4 Other

Chumash Council of Bakersfield Kern Valley Indian Council Kitanemuk and Yowlumne Tejon Indians Lone Pine Paiute-Shoshone Reservation Native American Heritage Council of Kern County Santa Rosa Rancheria Tejon Indian Tribe Tubatulabal Tribe Tule River Indian Tribe

### 9.1 Lead Agency

#### Kern County Planning and Natural Resources Department

Lorelei H. Oviatt, AICP – Director Craig M. Murphy – Assistant Director Katrina A. Slayton – Advanced Planning Division Chief Ronelle Candia – Supervising Planner Cindi Hoover – Planner II

### 9.2 Technical Assistance

### Environmental Science Associates (ESA)

Kimberly Comacho – Project Director Arabesque Abdelwahed – Project Manager Jacqueline De La Rocha – Deputy Project Manager and Senior Air Quality Analyst Eric Schniewind – Senior Geologist, Hydrologist, and Hazardous Materials Analyst Tony Chung – Senior Noise Analyst Ryan Villanueva – Senior Biological Resource Analyst Michael Bever – Senior Archaeologist Michael Bever – Cultural Analyst Shadde Rosenblum – Senior Traffic Analyst Aaron Weiner – Technical Analyst This page intentionally left blank

### **10.1 Project Description**

Pacific Gas and Electric (PG&E), 2020. Economic Development Site Tool. Available at: https://www.pge.com/en\_US/large-business/services/economicdevelopment/opportunities/sitetool.page. Accessed May 2020.

Southern California Edison (SCE), 2020. Southern California Edison power Site Search Tool. Available at: https://www.arcgis.com/apps/webappviewer/ index.html?id=05a84ec9d19f43ac93b451939c330888. Accessed May 2020.

## 10.2 Aesthetics

- California Department of Transportation (Caltrans), 2017. California Scenic Highway Mapping System, Kern County. Available at: http://www.dot.ca.gov/hq/LandArch/16\_livability/scenic\_highways/. Accessed January 2020.
- Federal Highway Administration (FHWA), 2019a. "About America's Byways." Available at: https://www.fhwa.dot.gov/byways/about. Accessed January 2020.

—, 2019b. "Find Byways." Available at: https://www.fhwa.dot.gov/byways/states/CA/maps. Accessed January 2020.

—, 2015. *Visual Impact Assessment for Highway Projects*. (Publication No. FHWA-HI-88-054). Washington, D.C.

Illuminating Engineering Society (IES), 2000. The Lighting Handbook, 9th Edition.

- Kern County, 2017. *Kern County Zoning Ordinance*, Chapter 19.81, last amended September, 2017. Available at: https://www.kerncounty.com/planning/pdfs/KCZOSep17.pdf/. Accessed January 2020.
- Kern County, Planning and Natural Resources Department, Various Dates. *Kern County General Plan*, last amended September 22, 2009. Available at: https://kernplanning.com/planning/planning-documents/general-plans-elements/. Accessed January 2020.

Palmer, Caroline and Chad Laurent, "Solar and Glare," Meister Consultants Group, June 2014.

- U.S. Bureau of Land Management, 1978. USDI Manual 8400, Visual Resource Management. Washington, D.C.
- U.S. Department of Agriculture National Forest Service, 1995. *Landscape Aesthetics: A Handbook for Scenery Management*. (Agriculture Handbook No. 701). Washington, D.C.
- VisionScape Imagery, 2020. Existing and Proposed View Visual Simulations for the Pastoria Solar Project.

### **10.3 Agriculture and Forestry Resources**

California Government Code 51200-51297.4. Available at:

https://leginfo.legislature.ca.gov/faces/codes\_displayexpandedbranch.xhtml?tocCode=GOV&division =1.&title=5.&part=1.&chapter=7.&article=. Accessed October 2019.

- California Department of Agriculture and Measurement Standards, 2018. Kern County Agricultural Crop Report, 2018. Available at: http://www.kernag.com/caap/crop-reports/crop-reports.asp. Accessed October 2019.
- California Department of Conservation (DOC), 2019a. Williamson Act Program Overview. Available at: https://www.conservation.ca.gov/dlrp/wa/Pages/wa\_overview.aspx. Accessed October 2019.

—, 2019b. Contract Cancellations. Available at: https://www.conservation.ca.gov/dlrp/wa/Pages/removing\_contracts\_cancellations.aspx. Accessed October 2019.

—, 2018. Farmland Mapping and Monitoring Program, Kern County, Important Farmland Data Availability, Land Use Conversion Table, 2016-2018. Available at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Kern.aspx. Accessed October 2019.

—, 2017. Farmland Mapping and Monitoring Program, 2017 map. Available at: https://databasin.org/datasets/59ff8ef56b47424d8fd0af3b9cddc09a. Accessed October 2019.

- California Department of Finance (DOF), 2018. Table 2: E-5 City/County Population and Housing Estimates, 1/1/2018. Accessed October 2019.
- Kern County, Planning and Natural Resources Department, Zoning Ordinance, 2019. Kern County General Plans and Housing Element Annual Progress Report (January 1, 2018 to December 31, 2018), 11.0 Agricultural Land Conversion. October 2019.

—, 2017, Title 19 Zoning, Chapter 19.12.030.G, Uses Permitted with A Conditional Use Permit. Available at: https://kernplanning.com/planning/planning-documents/zoning-ordinance/. Accessed October 2019.

------, 2009. Kern County General Plan, Land Use, Open Space, and Conservation Element. Available at: https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf. Accessed October 2019.

- Kern Economic Development Corporation (KEDC), "Demographic Forecast," 2019. Available at: http://kedc.com/community-profile/demographics/demographic-forecast/. Accessed October 2019.
- Natural Resource Conservation Service (NRCS), 2019. Farmland Protection Policy Act. Available at: https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/fppa/. Accessed October 2019.

## 10.4 Air Quality

BREEZE Software, A Division of Trinity Consultants (BREEZE), 2017. California Emissions Estimator Model (CalEEMod) User's Guide, November 2017.

- California Air Pollution Control Officers Association (CAPCOA), 2016. What is Nitrogen Oxide. Available at: http://www.capcoa.org/health-effects/#What\_is\_Nitrogen\_Oxide. Accessed January 2020.
- California Air Resources Board (CARB), 2019. Top 4 Measurements and Days Above Standard (2016, 2017, and 2018). Available at: http://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed February 2020.
  - -----, 2017. EMission FACtors (EMFAC) model v1.0.2. Available at: https://www.arb.ca.gov/emfac/2017/. Accessed February 2020.
  - ——, 2009. *History of Sulfates Air Quality Standard*. Available at: http://www.arb.ca.gov/research/aaqs/caaqs//sulf-1/sulf-1.htm. Accessed February 2020.
- ——, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000. Available at: http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf. Accessed February 2020.
- CARB and American Lung Association of California, 2007. Recent Research Findings: Health Effects of Particulate Matter and Ozone Air Pollution, November 2007.
- California Department of Conservation, 2000. A General Location Guide for Ultramafic Rocks in California- Areas More Likely to Contain Naturally Occurring Asbestos. August, 2000. Available at: https://www.arb.ca.gov/toxics/asbestos/ofr\_2000-019.pdf. Accessed February 2020.
- California Public Utilities Commission (CPUC), 2017. California Renewables Portfolio Standard (RPS). Available at: http://www.cpuc.ca.gov/RPS\_Homepage/. Accessed February 2020.
- Center for Disease Control and Prevention (CDC), 2020a. Symptoms of Coronavirus. Available at: https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html. Accessed June 18, 2020.
- CDC, 2020b. How COVID-19 Spreads. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html. Accessed June 18, 2020.
- Dockery, D. W. and Pope, C.A., III, 2006. *Health Effects of Fine Particulate Air Pollution: Lines that Connect. Journal of the Air and Waste Management Association*, Volume 56, pp.709–742, 2006.
- Fierro, Maria A. et al, 2001. Adverse Health Effects of Exposure to Ambient Carbon Monoxide, September 2001.
- Harvard, 2020. Exposure to air pollution and COVID-19 mortality in the United States: A nationwide cross-sectional study (Updated April 24, 2020). Available at: https://projects.iq.harvard.edu/covid-pm. Accessed June 18, 2020.
- Holshue, et al., 2020. First Case of 2019 Novel Coronavirus in the United States, March 5, 2020. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7092802/. Accessed June 19, 2020.
- Jacobs, 2019. Air Quality and Greenhouse Gasses Study for the Pastoria Solar Project Kern County, California, November 2019.
- Kern Council of Governments (Kern COG), 2018. 2018 Regional Transportation Plan and Sustainable Communities Strategy, August.

- —, 2016. Conformity Determination for the Kern Council of Governments (KCOG) 2017 Federal Transportation Improvement Program (FTIP) and 2014 Regional Transportation Plan (RTP) Amendment #1, December 16. Available at: http://www.kerncog.org/wp-content/uploads/2018/12/2019FTIPAmend1.pdf. Accessed February 2020.
- Kern County, 2009. Kern County General Plan. Available at: https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf. Accessed February 2020.
  - —, 2006. Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports, December 2006. Available at: http://kernair.org/Documents/CEQA/AirQualityAssessmentPreparationGuidelines.pdf. Accessed January 2020.
- Office of Environmental Health Hazards Assessment (OEHHA), 2015. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February.
- Office of Environmental Health Hazards Assessment and American Lung Association, (OEHHA ALA), 2001. *Health Effects of Diesel Exhaust*. May 21. Available at: https://oehha.ca.gov/air/health-effects-diesel-exhaust. Accessed July 2017.
- Peters, A., Dockery, D.W., Muller, J.E., Mittleman, M.A., 2001. *Increase Particulate Air Pollution and the Triggering of Myocardial Infarction*, Circulation, 103: 2810–2815, 2001.
- South Coast Air Quality Management District (SCAQMD), 2015. Application of the SCAQMD for leave to file brief of amicus curiae in support of neither party and [proposed] brief amicus curiae, California Supreme Court, Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno and Friant Ranch, L.P., Appeal from the Superior Court of California, County of Fresno, Case No. 11CECG00726, Filed April 13, 2015.
  - ——, 1993. SCAQMD's CEQA Air Quality Handbook, Table A9-11-A. Available at http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993). Accessed February 2020.
- San Joaquin Valley Air Pollution Control District (SJVAPCD), 2020. *Ambient Air Quality Standards & Valley Attainment Status*. Available at: http://www.valleyair.org/aqinfo/attainment.htm.
  - , 2018. Rule 9510; Indirect Source Review. December. Available at: https://www.valleyair.org/rules/currntrules/r9510-a.pdf.
  - , 2016. 2016 Ozone Plan for 2008 8-hour Ozone Standard. June. Available at: http://valleyair.org/Air\_Quality\_Plans/Ozone-Plan-2016.htm.
  - , 2015. Guidance for Assessing and Mitigating Air Quality Impacts. March 2015.
  - , 2005. Rule 4101 Visible Emissions. February 17, 2005. Available at: http://www.valleyair.org/rules/1ruleslist.htm.
  - —, 2004. Regulation VIII Fugitive PM10 Prohibitions. August 19, 2004. Available at: http://www.valleyair.org/rules/1ruleslist.htm.
  - —, 1992. Rule 4102 Nuisance, December 17, 1992. Available at: https://www.arb.ca.gov/drdb/sju/cur.htm.

- U.S. Environmental Protection Agency (USEPA), 2012. *Integrated Science Assessment for Lead (Third External Review Draft)*, November 2012. Available at: http://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=242655#Download. Accessed February 2020.
  - —, 2011. AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors. Chapter 13.2.1, Paved Roads, January 2011.
  - —, 2006. AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors. Chapter 13.2.2, Unpaved Roads, November 2006.

——, 2000. Technology transfer network, Air Toxics Website. Available at: https://www.epa.gov/haps/health-effects-notebook-hazardous-air-pollutants. Accessed January 2018.

Valley Fever Center for Excellence, 2019a. Order the Right Tests. Available at: https://vfce.arizona.edu/valley-fever-people/order-right-tests. Accessed in August 2019.

—, 2019b. Check for Complications. Available at: https://vfce.arizona.edu/valley-fever-people/check-complications. Accessed August 2019.

- Weather Underground, 2017. "Bakersfield, CA; Weather History for Meadows Field January 2016 to December 2016." Available at: https://www.wunderground.com/history/monthly/KBFL/date/2019-6?req\_city=Bakersfield&req\_statename=California. Accessed June 3, 2019.
- Western Regional Climate Center (WRCC), 2019. "Kern River PH1, California (04520)." Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4520. Accessed June 4, 2019.
- Western Regional Air Partnership (WRAP), 2006. WRAP Fugitive Dust Handbook. Available at: https://www.wrapair.org/forums/dejf/fdh/content/FDHandbook\_Rev\_06.pdf.

## **10.5** Biological Resources

California Department of Fish and Wildlife (CDFW), 2018. California Natural Community List. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline

——, 2012. *Staff Report on Burrowing Owl Mitigation*. Sacramento: California Department of Fish and Game.

- California Native Plant Society (CNPS), 2019. Inventory of Rare and Endangered Plants, (online edition, version 8-03). Available at: http://www.rareplants.cnps.org/. Accessed January 2019.
- Google Earth, 2019. Available at: https://www.google.com/earth/. Accessed January 2019.
- Hickman, J.C., ed., 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley and Los Angeles, CA. 1,400 pp.
- Jacobs, 2019a. Botanical Resources Survey Report Pastoria Solar Project.
- Jacobs, 2019b. Wildlife Resources Assessment Pastoria Solar Project.
- National Oceanic and Atmospheric Administration (NOAA), 2019. "Bakersfield Climate Monthly Summaries." Available at: https://www.weather.gov/hnx/bflmain. Accessed June 4, 2019.

- Natural Resource Conservation Science (NRCS), 2019. Online Web Soil Survey. Available at: https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/survey/?cid=nrcs142p2\_053369. Accessed January 2019.
- Sharon A. Poessel, Joseph Brandt, Laura Mendenhall, Melissa A. Braham, Michael J. Lanzone, Andrew J. McGann, Todd E. Katzner, 2018. *Flight response to spatial and temporal correlates informs risk from wind turbines to the California Condor*, April 11, 2018.
- Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens, 2009. A Manual of California Vegetation, 2nd ed. California Native Plant Society, Sacramento, CA. 1,300 pp.
- Snyder and Snyder, 2000. *The California Condor: A Saga of Natural History and Conservation*, May 20, 2000.
- U.S. Army Corps of Engineers (USACE), 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).
- U.S. Fish and Wildlife Service (USFWS), 2019a. Information for Planning and Consultation. Available at: http://ecos.fws.gov/ipac/. Accessed May 1, 2019.

\_\_\_\_\_, 2019b. About the California Condor Recovery Program. Available at: https://www.fws.gov/refuge/Hopper\_Mountain/About\_the\_CACO\_Recovery\_Prog.html. Accessed January 27, 2020.

——, 1998. Recovery Plan for Upland Species of the San Joaquin Valley, California. Region 1, Portland, OR. 319 pp. Available at: https://ecos.fws.gov/docs/recovery\_plans/1998/980930a.pdf.

Western Regional Climate Center (WRCC), 2019. Tejon Rancho, California (048839). Period of Record Monthly Climate Summary. Period of Record: 01/01/1895 to 05/31/2016. Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca8839. Accessed January 2020.

## **10.6 Cultural Resources**

- Arkush, Brooke S, 1993. Yokuts Trade Networks and Native Culture Change in Central and Eastern California, *Ethnohistory*, Vol. 40, No. 4 (619–640).
- Bean, Lowell John and Charles R. Smith, 1978. "Serrano" in *California*. Edited by R. F. Heizer. *Handbook of North American Indians*. Vol. 8, pp. 570–574. W. C. Sturtevant, general editor. Smithsonian Institution. Washington, D.C., 1978.
- Blackburn, Thomas C., and Lowell John Bean, 1978. "Kitanemuk" in *California*. Edited by R. F. Heizer. *Handbook of North American Indians*. Vol. 8, pp. 564–569. W. C. Sturtevant, general editor. Smithsonian Institution. Washington, D.C., 1978.
- Burmeister, Eugene, 2003. "From an April 20, 1972 Bakersfield Californian Article on Kern County Oil History", *Historic Kern: the Kern County Historical Society Quarterly Bulletin* 53(3), Fall 2003.
- California Department of Water Resources (DWR), 2006. California's Groundwater: Tulare Lake Hydrologic Region, San Joaquin Valley Groundwater Basin, Bulletin 118.

- Diblee, T.W, 1973. Geologic Map of the Pastoria Creek Quadrangle. Open-File Report 73-57. Available at: https://pubs.usgs.gov/of/1973/0057/plate-3.pdf. Accessed November 11, 2019.
- Fagan, Brian, 2003. Before California, Rowman & Littlefield Publishers Inc., Lanham, MD.
- Fernandeño Tataviam Band of Mission Indians (FTBMI). n.d. *Fernandeño Tataviam Band of Mission Indians Historical Tribal Territory*. Map on fil at the Fernandeño Tataviam Band of Mission Indians.
- Jacobs, 2019. Cultural Resources Inventory of the Pastoria Solar Project, Kern County, California.
- JRP Historical Consulting, 2009. *Historic Architecture Technical Report: Inventory and Evaluation, Hydrogen Energy California Project*, submitted to URS Corporation, April, 2009.
- Johnson, John R., and David D. Earle, 1990. Tataviam Geography and Ethnohistory. *Journal of California and Great Basin Anthropology* 12(2):191–214.
- King, Chester J., and Thomas C. Blackburn, 1978. Tataviam. In *California*, edited by Robert F. Heizer, pp. 535-537. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.
- Kroeber, Alfred L, 1925. Handbook of the Indians of California. Dover Publications, Inc., New York.
- Kyle, D. E., 1990. Historic Spots in California, Stanford University Press, Stanford, CA, 1990.
- Price, Barry, Alan G. Gold, Barbara S. Tejada, David D. Earle, Suzanne Griset, Jay B. Lloyd, Mary Baloian, Nancy Valente, Virginia S. Popper, and Liza Anderson, 2008. *The Archaeology of CA-LAN-*192: Lovejoy Springs and Western Mojave Desert Prehistory. Prepared by Applied Earthworks for the County of Los Angeles. September 2008.
- Sutton, Mark Q., 1988. An Introduction to the Archaeology of the Western Mojave Desert, California, *Archives of California Prehistory* No. 14, Coyote Press, Salinas, California, 1988.
- U.S. Department of the Interior, 2011. Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (As Amended and Annotated). Accessed at http://www.nps.gov/history/local-law/arch stnds 0.htm, on December 7, 2012.
- Warren, C. N, 1984. The Desert Region. California Archaeology. Coyote Press. Salinas, California.

## 10.7 Energy

- Association of Environmental Professionals (AEP), 2018. *California Environmental Quality Act (CEQA) Statue and Guidelines*. Available at: http://resources.ca.gov/ceqa/docs/2018 CEQA Statutes and Guidelines.pdf. Accessed January
- California Air Resources Board (CARB), 2019. EMFAC2017 Web Database. Available at: https://www.arb.ca.gov/emfac/2014/. Accessed January 2020.
- California Air Resources Board (CARB), 2017. *Clean Car Standards—Pavley, Assembly Bill 1493*. Available at: http://www.arb.ca.gov/cc/ccms/ccms.htm. Accessed January 2020.

- California Energy Commission (CEC), 2018. Toward a Clean Energy Future: 2018 Integrated Energy Policy Report, 2018.
  - —, 2016a. 2016–2017 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program, May 2016. Available at: http://www.energy.ca.gov/2015publications/CEC-600-2015-014/CEC-600-2015-014-CMF.pdf. Accessed January 2020.
  - , 2016b. 2015 Integrated Energy Policy Report, June 2016. Available at: https://ww2.energy.ca.gov/2015\_energypolicy/. Accessed January 2020.
- California Natural Resources Agency, 2018. 2018 Amendments and Additions to the State CEQA Guidelines, Final Adopted Text, December 28. Available at: http://resources.ca.gov/ceqa/docs/2018 CEQA FINAL TEXT 122818.pdf. Accessed January 2020.
- California Public Utilities Commission (CPUC), 2019. *RPS Program Overview*. Available at: http://www.cpuc.ca.gov/RPS\_Overview/. Accessed January 2020.
- EIA (U.S. Energy Information Administration), 2019a. "State Electricity Profiles California Electricity Profile 2017". January 8, 2019. Available at: https://www.eia.gov/electricity/state/california/index.php. Accessed January 2020.
  - ——, 2019b. "Natural Gas Consumption by End Use." Available at: https://www.eia.gov/dnav/ng/ng\_cons\_sum\_a\_EPG0\_VC0\_mmcf\_a.htm. Accessed January 2020.
  - ——, 2019c. "Use of Energy Explained" Available at: https://www.eia.gov/energyexplained/use-ofenergy/. Accessed January 2020.
  - —, 2018a. "California State Energy Profile". Last updated November 15, 2018. Available at: https://www.eia.gov/state/print.php?sid=CA. Accessed January 2020.
  - —, 2018b. "California State Profile and Energy Estimates Table F15: Total Petroleum Consumption Estimates, 2016." Available at: http://www.eia.gov/state/ seds/data.cfm?incfile=/state/seds/sep\_fuel/html/fuel\_use\_pa.html&sid=US&sid=CA. Accessed January 2020.
- Jacobs, 2019. Energy Study for the Pastoria Solar Project, Kern County, California.
- Kern County, 2009. Kern County General Plan. Available at: https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf. Accessed January 2020.
- NHTSA, 2019. Corporate Average Fuel Economy standards. Available at: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy. Accessed January 2020.
- Pacific Gas and Electric (PG&E), 2020. Economic Development Site Tool. Available at: https://www.pge.com/en\_US/large-business/services/economicdevelopment/opportunities/sitetool.page. Accessed May 2020.
- Southern California Edison (SCE), 2020. Southern California Edison power Site Search Tool. Available at: https://www.arcgis.com/apps/webappviewer/ index.html?id=05a84ec9d19f43ac93b451939c330888. Accessed May 2020.
  - ------, 2019. 2017 Power Content Label. Available at: https://ww2.energy.ca.gov/pcl/labels/2017\_labels/SCE\_2017\_PCL.pdf.

- Southern California Gas Company (SoCalGas), 2007. Maps Showing Gas Service Areas of Southern California Gas Company and Pacific Gas and Electric Company in Kern County. Available at: https://www2.socalgas.com/regulatory/tariffs/tm2/pdf/Kern County Map.pdf. Accessed May 2020.
- United States Environmental Protection Agency (USEPA and NHTSA), 2016. *Federal Register* / Vol. 81, No. 206 / Tuesday, October 25, 2016 / Rules and Regulations. Final Rule for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles Phase 2. Available at: https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf. Accessed November 2019.

### 10.8 Geology and Soils

- Bryant, William A. and Hart, Earl W., 2007. Special Publication 42: Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with index to Earthquake Fault Zones Maps, Interim Revision 2007. Available at: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf.
- California Geologic Survey (CGS), 2002. Note 36: California Geomorphic Provinces, revised December 2002.
- Farr, Tom G.; Jones E., Cathleen; and Liu, Zhen, 2017. Progress Report: Subsidence in California, March 2015–September 2016, 2017.
- Jacobs, 2019a. Soils Analysis Study for the Pastoria Solar Project, Kern County, California.
- Jacobs, 2019b. Paleontological Resources Assessment for the Pastoria Solar Project, Kern County, California.
- Jennings C. W., 2010. 2010 Fault Activity Map of California, 2010.
- Kern County, 2009. *Kern County General Plan*. Available at: https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf.
- Society of Vertebrate Paleontology (SVP), 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.
- Southern California Earthquake Data Center (SCEDC), 2020. Significant Earthquakes and Faults. Available at: http://scedc.caltech.edu/significant/index.html. Accessed January 2020.

Terracon, 2019. Geotechnical Engineering Report, December 10, 2019.

## **10.9 Greenhouse Gas Emissions**

- California Air Pollution Control Officers Association, 2008. *CEQA & Climate Change Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, January. Available at: http://www.capcoa.org/wpcontent/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf. Accessed August 2019.
- California Air Resources Board (CARB), 2019a. *California's 2009–2017 Greenhouse Gas Emissions Inventory – 2018 Edition*. Available at: https://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed February 2020.

- —, 2019b. California Greenhouse Gas Inventory for 2000–2017 by Category as Defined in the 2008 Scoping Plan. Available at:
- https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg\_inventory\_scopingplan\_sum\_2000-17.pdf. Accessed February 2020.

—, 2019c. Advanced Clean Cars Program. Available at: https://ww2.arb.ca.gov/ourwork/programs/advanced-clean-cars-program. Accessed December 2019.

—, 2017. California's 2017 Climate Change Scoping Plan: The strategy for achieving California's 2030 greenhouse gas target. November. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping\_plan\_2017\_es.pdf. Accessed August 2019.

—, 2014a. *California Greenhouse Gas Emission Inventory: 2000–2012*, May 2014. Available at: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/ghg\_inventory\_00-12\_report.pdf. Accessed February 2020.

—, 2014b. First Update to the Climate Change Scoping Plan Building on the Framework Pursuant to AB 32 The California Global Warming Solutions Act of 2006. Available at: https://www.arb.ca.gov/cc/scopingplan/2013\_update/first\_update\_climate\_change\_scoping\_plan.pdf. Accessed February 2020.

—, 2010. Proposed SB 375 Greenhouse Gas Targets: Documentation of the Resulting Emission Reductions based on MPO Data, August 9, 2010. Available at: https://ww3.arb.ca.gov/cc/sb375/mpo.co2.reduction.calc.pdf. Accessed February 2020.

—, 2008. Climate Change Scoping Plan a Framework for Change Pursuant to AB 32 The California Global Warming Solutions Act of 2006. Available at: https://www.arb.ca.gov/cc/scopingplan/document/adopted\_scoping\_plan.pdf.

- California Energy Commission, 2019. Clean Energy and Pollution Reduction Act SB 350. Available at: https://www.energy.ca.gov/rules-and-regulations/energy-suppliers-reporting/clean-energy-andpollution-reduction-act-sb-350. Accessed August 2019.
- California Environmental Protection Agency (CalEPA), 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. California Environmental Protection Agency. Available at: http://www.climatechange.ca.gov/climate\_action\_team/reports/2006report/2006-04-03\_FINAL\_CAT\_REPORT.PDF. Accessed February 2020.
- Intergovernmental Panel on Climate Change (IPCC), 2001. Working Group II Impacts, Adaptation, and Vulnerability. Available at: https://www.ipcc.ch/working-group/wg2/?idp=326. Accessed February 2020.
- Jacobs, 2019. Air Quality and Greenhouse Gasses Study for the Pastoria Solar Project Kern County, California. November 2019.
- Kern Council of Governments (Kern COG), 2018. 2018 Regional Transportation Plan/Sustainable Communities Strategy. August 16, 2018. Available at: https://www.kerncog.org/wpcontent/uploads/2018/10/2018 RTP.pdf. Accessed February 2020.
- Kern County Planning Department, 2009. Kern County General Plan. Available at: https://www.kerncounty.com/planning/pdfs/kcgp/KCGP.pdf. Accessed August 2019.

- San Joaquin Valley Air Pollution Control District, 2012. Kern County Communitywide Greenhouse Gas Emissions Inventory 2005 Baseline Year – 2020 Forecast. Available at: https://www.kerncounty.com/planning/pdfs/kc ghg final report.pdf. Accessed February 2020.
- United States Environmental Protection Agency (USEPA), 2018. Mid-term Evaluation Final Determination, April 2018. Available at: https://www.govinfo.gov/content/pkg/FR-2018-04-13/pdf/2018-07364.pdf, Accessed February 2020.

——, 2017. Overview of Greenhouse Gases. Last Update April 2017. Available at: https://www.epa.gov/ghgemissions/overview-greenhouse-gases. Accessed February 2020.

—, 2011. Mandatory Reporting of Greenhouse Gases (40 CFR part 98)- Fact Sheet, June 2011. Available at: https://www.epa.gov/sites/production/files/2015-07/documents/part98factsheet.pdf. Accessed August 2019.

—, 2010. Final Rule: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule – Fact Sheet. Available at: https://www.epa.gov/sites/production/files/2015-12/documents/20100413fs.pdf. Accessed August 2019.

, 2004. *Federal Register* / Vol. 69, No. 124 / Tuesday, June 29, 2004. Rules and Regulations. Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel. Available at: https://www.gpo.gov/fdsys/pkg/FR-2004-06-29/pdf/04-11293.pdf. Accessed February 2020.

USEPA and National Highway Traffic Safety Administration (NHTSA), 2018. *The Safer Affordable Fuel-Efficient (SAFE) Vehicle Rule for Model Years 2021–2026 Passenger Cars and Light Trucks*. Available at: https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/ld\_cafe\_my2021-26\_nprm\_2.pdf. Accessed February 2020.

—, 2016. Federal Register / Vol. 81, No. 206 / Tuesday, October 25, 2016 / Rules and Regulations. Final Rule for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2. Available at: https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf. Accessed February 2020.

—, 2011. *Federal Register* / Vol. 76, No. 179/ Thursday, September 15, 2011 / Rules and Regulations. Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles. Available at: http://www.gpo.gov/fdsys/pkg/FR-2011-09-15/pdf/2011-20740.pdf. Accessed February 2020.

### **10.10 Hazards and Hazardous Materials**

California Governor's Office of Emergency Services (CalOES), 2014. Hazardous Material Business Plan FAQ February 2014. Available at:

https://www.caloes.ca.gov/FireRescueSite/Documents/HMBP%20FAQ%20-%20Feb2014.pdf. Accessed December 2019.

California Department of Forestry and Fire Prevention (CAL FIRE), 2007a. "Fire Hazard Severity Zones in SRA: Kern County," adopted November 7, 2007.

CAL FIRE, 2007b. "Fire Hazard Severity Zones in LRA: Kern County," September 17, 2017.

- California Geologic Energy Management Division (CalGEM), 2019. Well Finder. Available at: http://maps.conservation.ca.gov/doggr/#close. Accessed December 2019.
- Department of Homeland Security (DHS), 2016. Hazardous Materials Incidents. Available at: http://www.ready.gov/hazardous-materials-incidents. Accessed December 2019.
- Department of Toxic Substances Control (DTSC), 2019. EnviroStor database findings. Available https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Grapvine%2C+CA. Accessed December 5, 2019.
- Fthenakis, 2003. *Life Cycle Impact Analysis of Cadmium in CdTe PV Production*, accepted December 1, 2003.
- Kern County Fire Department (KCFD, 2012. *Hazard Mitigation Plan*. Available at: https://www.kerncountyfire.org/operations/divisions/office-of-emergency-services/emergencyplans/hazard-mitigation-plan.html. Accessed August 19, 2019.
- KCFD, 2018. Kern County Fire Department, United Strategic Fire Plan, Updated March 2018. Available at http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf716.pdf. Accessed March 4, 2019.
- Kern County Fire Department (KCFD), 2019. Standard No. 503-507, Solar Panels (Ground Mounted, Commercial & Residential), Fire Protection Requirements. Available at: https://kerncountyfire.org/ images/stories/fire\_prevention/Permit%20Requirements/SolarPanels.pdf. Accessed July 30, 2019.
- SCS, 2019. Phase I Environmental Site Assessment and Limited Soil Sampling, November 18, 2019.
- State Water Resources Control Board (SWRCB), n.d. GeoTracker database findings, https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Grapevine%2C+CA. Accessed December 5, 2019.
- Sinha, et al., 2001. Fate and Transport Evaluation of Potential Leaching Risks from Cadmium Telluride Photovoltaics, July 31, 2012.
- World Health Organization (WHO), 2006. Electromagnetic Fields and Public Health, Static electric and magnetic fields. Available at: https://www.who.int/peh-emf/publications/facts/fs299/en/. Accessed May 2020.

### **10.11 Hydrology and Water Quality**

- Department of Water Resources (DWR), 2018. San Joaquin Valley White Wolf Subbasin, California's Groundwater Bulletin 118, March 5, 2018.
- Erler & Kalinowski, Incorporated (EKI), 2016. White Wolf Subbasin Technical Report, March 16, 2016.
- Jacobs Engineering Group, 2019. Water Supply Assessment Pastoria Solar Project, Kern County, California.
- Kasraie Consulting, 2019. Pastoria Solar Project, Preliminary Floodplain Study and Scour Analysis, August 10, 2018 revised June 17, 2019.

- RWQCB, 2018. Central Valley Region, Water Quality Control Plan (Basin Plan) for the Tulare Lake Basin, Available at https://www.waterboards.ca.gov/centralvalley/water\_issues/basin\_plans/ tlbp 201805.pdf, revised May 2018.
- Western Regional Climate Center, 2019. *Tulefield, California (049052) Period of Record Monthly Climate Summary Period of Record: 10/01/1959 to 07/31/1969*, Available at https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9052. Accessed October 20, 2019.

## 10.12 Land Use and Planning

- California Department of Conservation (DOC), 2017. Farmland Mapping and Monitoring Program, 2017 map. Available at: https://databasin.org/datasets/59ff8ef56b47424d8fd0af3b9cddc09a. Accessed October 2019.
- Kern County, 2009. *Kern County General Plan*. Available at: https://kernplanning.com/planning/ planning-documents/general-plans-elements/. Accessed June 13, 2019.
- Kern Council of Governments (Kern COG), 2018. 2018 Regional Transportation Plan and Sustainable Communities Strategy, August 16, 2018, Available at: https://www.kerncog.org/wpcontent/uploads/2018/10/2018\_RTP.pdf. Accessed December 2019.
- Schlumberger, 2020. Oilfield Glossary. Available at: https://www.glossary.oilfield.slb.com/en/Terms/d/dry hole.aspx. Accessed January 2020.

## **10.13 Mineral Resources**

- California Geologic Survey (CGS), 1999a. Mineral Land Classification of Southeastern Kern County, California, Plate 11. 1999.
- CGS, 1999b. *Generalized geology of Southeastern Kern County, California, Map*, 1999. Available at: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR\_99-15/OFR\_99-15\_Plate1.pdf.
- California Geologic Energy Management Division (CalGEM), 2019. Well Finder. Available at: http://maps.conservation.ca.gov/doggr/#close. Accessed January 2020.
- DOC, 2019. California Geologic Energy Management Division (CalGEM), 2019. Available at: https://www.conservation.ca.gov/calgem/Pages/Index.aspx. Accessed October 29, 2019.
- Schlumberger, 2020. Oilfield Glossary. Available at: https://www.glossary.oilfield.slb.com/en/Terms/d/dry\_hole.aspx. Accessed January 2020.
- SCS, 2019. Phase I Environmental Site Assessment and Limited Soil Sampling, November 18, 2019.
- U.S. Geological Survey (USGS), 2019. Active mines and mineral plants in the U.S. Available at: https://mrdata.usgs.gov/mrds/. Accessed June 17, 2019.

### 10.14 Noise

- California Department of Transportation (Caltrans), 2013. *Transportation and Construction Vibration Guidance Manual*. September 13. Federal Transit Administration's (FTA), 2018. *Transit Noise and Vibration Impact Assessment Manual*. September.
- Jacobs, 2019. Noise Study for the Pastoria Solar Project Kern County, California. October 2019.
- Kern County, 2016. Draft Environmental Impact Report, SCH# 2014041005, Grapevine Specific and Community Plan Project, Tejon Ranchcorp, 2016.
- Kern County, 2009. Kern County General Plan. Chapter 3: Noise Element, September 22.
- State of California, Governor's Office of Planning and Research, 2003. Land Use Compatibility for Community Noise Environment, October.
- Trane, 2002. Sound Data and Application Guide for New and Quieter Air-Cooled Series R Chiller.
- United States Environmental Protection Agency (USEPA), 1974. Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety (NTIS 550\9-74-004), March.

## **10.15 Public Services**

2016 California Fire Code, California Code of Regulations, Title 24, Part 9, effective January 1, 2017.

- Barnwell, Jack, "Kern County approves \$2.78 B budget for fiscal year 2018–2019." The Daily Independent. August 31, 2018, Available at: http://www.ridgecrestca.com/news/20180831/kern-county-approves-278b-budget-for-fiscal-year-2018-19. Accessed December 13, 2018.
- California Department of Fire and Forestry (CALFIRE), 2012. About CAL FIRE. Available at: http://calfire.ca.gov/about/about. Accessed January 17, 2019.
- California Department of Fire and Forestry (CALFIRE), 2007/2008. Wildland Hazards and Building Codes, Kern County FHSZ Map. Available at: http://www.fire.ca.gov/fire\_prevention/fhsz\_maps\_kern. Accessed January 17, 2019.
- California Highway Patrol (CHP), 2019a. "Find an Office-Organizational Chart." Available at https://www.chp.ca.gov/home/about-us/organizational-chart. Accessed December 19, 2019.
- CHP, 2019b. "Inland Division." Available at: https://www.chp.ca.gov/Find-an-Office/Inland-Division. Accessed December 19, 2019.
- Center for Public Safety and Land Management (CPSM), 2017. *Operational and Administrative Analysis, Kern County, California, Final Report*, Table 6-1. Available at: https://www.kerncounty.com/artman2/main/uploads/1/Kern-County-Final-Report-2017\_1.pdf. Accessed December 13, 2018.
- General Shafter Elementary School District (GSESD), 2019. Staff, General Shafter School District 2019. Available at: http://generalshafter.org/staff/. Accessed December 2019.

- Kern County Fire Department (KCFD), 2019a. "About Us." Available at: http://www.kerncountyfire.org/about-us.html. Accessed December 11, 2019.
- KCFD, 2019b. "Fire Stations." Available at: http://www.kerncountyfire.org/operations/firestations.html#35.2963076/-118.6703035/8/cats/16/hotspot/52. Accessed December 13, 2019.
- KCFD, 2018. Kern County Fire Department, United Strategic Fire Plan, updated March 2018. Available at: https://www.dropbox.com/s/38ao2nvk24w6coy/Kern%20County%20Fire%20Department%20 Unit%20Strategic%20Fire%20Plan.pdf?dl=0. Accessed March 4, 2019.
- KCFD, 2009. Kern County Fire Department Wildland Fire Management Plan. Available at: https://www.dropbox.com/s/wzoxztjz83nezpt/Kern%20County%20Fire%20Department%20Wildland %20Fire%20Management%20Plan.pdf?dl=0. Accessed February 26, 2019.
- KCFD, 2012. *Kern Multi Jurisdiction Hazard Mitigation Plan, Comprehensive Update*, September 2012. Available at http://www.kerncountyfire.org/operations/divisions/office-of-emergency-services/emergency-plans/hazard-mitigation-plan.html. Accessed February 26, 2019.
- Kern County Sheriff's Office (KCSO), 2019a. "KCSO History: Our History," Available at: http://www.kernsheriff.org/kcso\_history.aspx. Accessed December 18, 2019.
- KCSO, 2019b. "Contact Us." Available at: http://www.kernsheriff.org/contact.aspx. Accessed December 18, 2019.
- KCSO, 2019c, "Rosamond Substation." Available at http://www.kernsheriff.org/rosamond.aspx. Accessed December 18, 2019.
- Superior Court of California, 2019. Superior Court of California, County of Kern, about Kern Superior Courts. Available at: https://www.kern.courts.ca.gov/. Accessed December 2019.
- Kern County Library, 2019. About the Kern County Library. Available at: http://www.kerncountylibrary.org.
- Kern County Superintendent of Schools, 2019. Kern County District and School List, spreadsheet, 2019.
- Kern County Superintendent of Schools, 2015. General Shafter Elementary School District Map, 2014–2015.
- Kern County Superintendent, 2010. Kern County School Districts 2009–2010. Office of Christine Lizardi Frazier, Kern County Superintendent of Schools.
- MuniFinancial (Muni), 2007. Kern County Capital Improvement Plan, September 27, 2007. Available at http://www.co.kern.ca.us/rma/pdfs/CIP/KernCountyrevisedCIP092707.pdf. Accessed February 26, 2019.
- United States Postal Service (USPS), 2019. Postmaster Finder, Post Offices by County, Kern County. Available at: https://webpmt.usps.gov/pmt007.cfm. Accessed December 2019.
- Willdan, 2009. Kern County Public Facilities Impact Fee Study, May 18, 2009. Available at: http://www.energy.ca.gov/sitingcases/beacon/documents/other/2010-01-19\_Kern\_County\_Comment\_Impact\_Fee\_TN-48738.pdf. Accessed February 26, 2019.

## **10.16 Transportation**

- Caltrans, 2016. *Project Development Procedures Manual*, Chapter 27: Access Control Modification. Available at: http://www.dot.ca.gov/design/manuals/pdpm/chapter/chapt27.pdf. Accessed September 20, 2019.
- Jacobs, 2020. Traffic Study for the Pastoria Solar Project Kern County, California, January 2020.
- Kern Council of Governments (Kern COG), 2018. 2018 Regional Transportation Plan and Sustainable Communities Strategy, August 16, 2018. Available at: https://www.kerncog.org/wpcontent/uploads/2018/10/2018 RTP.pdf. Accessed December 2019.
- Florida Department of Transportation, 2012. 2012 FDOT Quality/Level of Service Handbook Tables, Table 3.

## **10.17 Tribal Cultural Resources**

Jacobs, 2019. Cultural Resources Inventory of the Pastoria Solar Project, Kern County, California.

## **10.18 Utilities and Service Systems**

- CalRecycle, 2019a. SWIS Facility Detail, Bakersfield Metropolitan (Bena) Sanitary Landfill (15-AA-0273). Available at: https://www2.calrecycle.ca.gov/swfacilities/Directory/15-AA-0273/. Accessed December 17, 2019.
- CalRecycle, 2019b. SWIS Facility Detail, Lebec Sanitary Landfill (15-AA-0056). Available at: https://www2.calrecycle.ca.gov/swfacilities/Directory/15-AA-0056/. Accessed December 17, 2019.
- CalRecycle, 2019c. SWIS Facility Detail, Tehachapi Sanitary Landfill (15-AA-0062). Available at: https://www2.calrecycle.ca.gov/SWFacilities/Directory/15-AA-0062/Detail. Accessed December 17, 2019.
- CalRecycle, 2019d. About CalRecycle, What we do. Available at: https://www.calrecycle.ca.gov/aboutus/whatwedo. Accessed December 30, 2019.
- CalRecycle, 2019e. SWIS Facility Detail, Taft Recycling & Sanitary Landfill (15-AA-0061). Available at: https://www2.calrecycle.ca.gov/swfacilities/Directory/15-AA-0061/. Accessed December 17, 2019.
- Jacobs, 2019. Water Supply Assessment Pastoria Solar Project, Kern County, California.
- Kasraie Consulting, *Pastoria Solar Project, Preliminary Floodplain Study and Scour Analysis*, August 10, 2018, revised June 17, 2019.
- Pacific Gas and Electric (PG&E), 2020. Economic Development Site Tool. Available at: https://www.pge.com/en\_US/large-business/services/economicdevelopment/opportunities/sitetool.page. Accessed May 2020.

Southern California Edison (SCE), 2020. Southern California Edison power Site Search Tool. Available at: https://www.arcgis.com/apps/webappviewer/ index.html?id=05a84ec9d19f43ac93b451939c330888. Accessed May 2020.

## 10.19 Wildfire

- CAL FIRE, 2019a. *California Statewide Fire Map*. Available at: https://www.fire.ca.gov/imapdata/index.html. Accessed January 2020.
- CAL FIRE, 2019b. *Fire and Resource Assessment Program (FRAP) database, Fire Perimeters*. Available at https://frap.fire.ca.gov/data/frapgisdata-sw-fireperimeters\_download. Accessed January 2020.

International Journal of Wildland Fire, 2010. A numerical study of slope and fuel structure effects on coupled wildfire behaviour. Available at: https://www.fs.fed.us/rm/pubs\_other/rmrs\_2010\_linn\_r001.pdf.

—, 2002. An effective wind speed for models of fire spread. Available at: https://www.fs.fed.us/rm/pubs\_journals/2002/rmrs\_2002\_nelson\_r001.pdf.

- Jacobs, 2019. Botanical Resources Survey Report Pastoria Solar Project.
- Kern County Fire Department (KCFD), 2019. Standard No. 503-507, Solar Panels (Ground Mounted, Commercial & Residential), Fire Protection Requirements. Available at: https://kerncountyfire.org/images/stories/fire\_prevention/Permit%20Requirements/SolarPanels.pdf. Accessed July 30, 2019.
- ——, 2018. Unit Strategic Fire Plan Kern County Fire Department, March 2018. Available at: http://mitigatehazards.com/county-of-kern/documents/. Accessed December 30, 2019.
- Kern County Fire Department (KCFD), 2009. Kern County Fire Department Wildland Fire Management Plan, 2009. Available at: http://mitigatehazards.com/county-of-kern/documents/. Accessed December 30, 2019.

SCS, 2019. Phase I Environmental Site Assessment and Limited Soil Sampling, November 18, 2019.

This page intentionally left blank